Model 133

Mag Tape Coupler

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ECO # DATE DESCRIPTION 0060 9/17/83 Added P/N and Revision History 0196 10/5/83 Released New Manual 0226 11/23/83 Typo's-Pages 3-3, 3-7, 3-9 0282 3/29/84 Changed Name from 130 to 133 and Miscellaneous Changes 0313 5/22/84 Typo's-Pages 3-2, 3-3, 3-7, 3-9, 3-10, 5-2, 6-1, 6-2 0328 6/28/84 New ZETACO Cover 0331 7/12/84 Pg. 3-10 0347 7/26/84 Rev. Manual 0380 9/25/84 See ECO 0392 10/2/84 See ECO		
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1.0 INTRODUCTION

1.1 FEATURES

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1.0 INTRODUCTION

The Custom Systems' 133 Magnetic Tape Coupler interfaces to Tape Drives with "Industry Standard" embedded formatters which employ PE, NRZ, GCR and other recording formats. The Coupler transfers up to 64K word blocks of data and is totally transparent to Data General's Operational Software. The Coupler emulates Data General 6021 (used with RDOS or AOS) or Data General 6125 (used with AOS or AOS/VS) Tape Subsystems.

1.1 FEATURES

- .Interfaces Data General's Minicomputers to Formatted Magnetic Tape Drives produced by popular Tape Drive Manufacturers.
- .Microprocessor based controller adds flexibility and performance enhancements.

a) Dynamic inter-record gap	(These features enahance
	streaming capability using standard D.G. software.
b) Read look ahead	lusing standard D.G. software.

.Software compatibility to Data General operation software.

.FIFO buffering for data channel latency.

- .Automatic Self-test with error reporting by visual light emitting diode.
- .Memory addressing capability to 32K words (64K optional).
- .Software selectable streamer modes
- .Handles up to eight industry standard Half Inch Tape Drives.
- .Requires +5 volts only with less power consumption than embedded type controllers.
- .Automatic High Speed File Search.

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- 2.3 PHYSICAL
- 2.4 ENVIRONMENT
- 2.5 MAGNETIC TAPE MEDIA CAPACITY

2.0 SPECIFICATIONS

2.1 INTERFACE

- Electrical: Industry standard embedded formatter, open collector, low active, TTL
 - Driver: Logic Low = .4V Min. Logic High = 2.4V Min.
 - Receiver: Schmidt Trigger
 - Cabling: Two 50 pin ribbon cables installed on computer backplane or FCC cabling.

(Maximum allowable cable length between Coupler and last formatter is 20 feet.)

- Parity: Odd (Even parity for maintenance only)
- Daisy Chain: 8 Drives or 3 Drives plus Formatted Drive (Refer to Diagram 2.1, Figures 1, 2 and 3)
 - Figure 1 Up to 8 Streamer Drives
 - Figure 2 1 to 4 Streamers and a Formatted Drive
 - Figure 3 2 Formatters with 3 Drives on each Formatted Drive
- 2.2 POWER

Typically 3.0 Amps at +5 Volts.

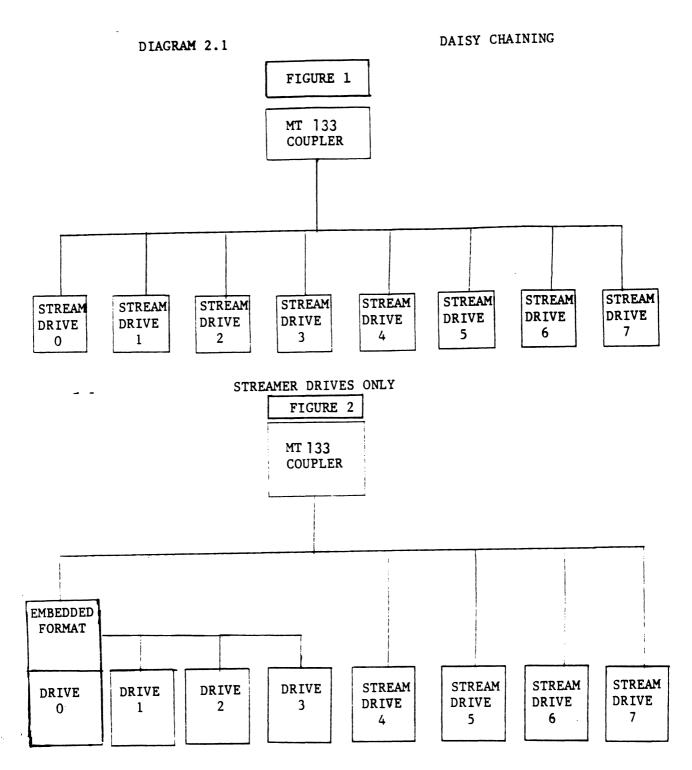
2.3 PHYSICAL

Dimensions: 15 in. by 15 in. by 1/2 in.

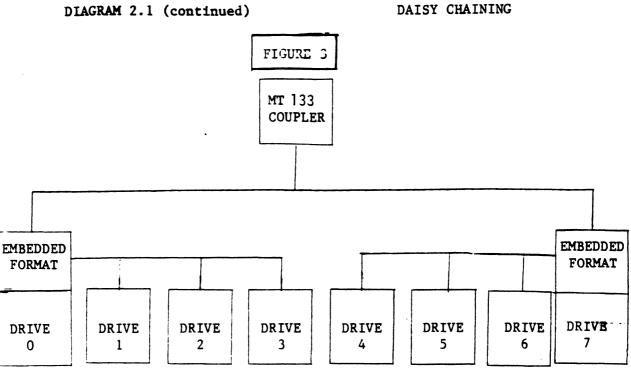
Weiaht:	10	lbs.	including	cables	and	manuals
		103.	including	Capies	anu	manuals

2.4 ENVIRONMENT

Operating Temp:	0 to 55 degrees C
Relative Humidity:	10% to 90% (non-condensing)



EMBEDDED FORMATTER AND STREAMER DRIVES



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TWO EMBEDDED FORMATTERS

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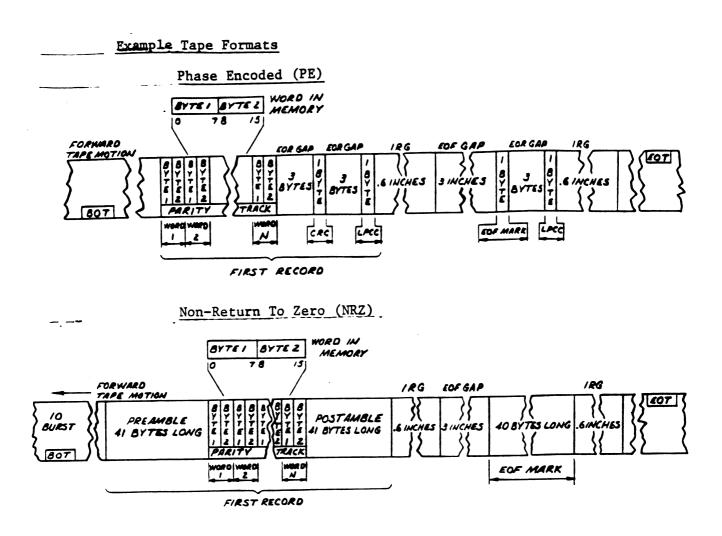


Figure 4

2.5 MAGNETIC TAPE MEDIA CAPACITY

The following formula will aid in determining how much data storage capacity in Bytes (Byte = 8 Bits) a length of tape will offer.

OF BYTES/LENGTH OF TAPE = (TLEN - 25) (RLEN) (12) ((RLEN + TFD)/BPI) + GAPL) TLEN = LENGTH OF TAPE IN FEET RLEN = RECORD LENGTH IN BYTES TFD = TAPE FORMAT DATA (PE = 82, NRZ = 8) BPI = RECORDING DENSITY (PE = 1600, NRZ = 800) GAPL = GAP LENGTH IN INCHES (NOMINAL = .6")

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 - 3.1 UNPACKING AND INSPECTION
 - 3.2 CONFIGURING THE MODEL 133
 - 3.2.1 6021 EMULATION
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 - 3.2.3 JUMPER TABLE
 - 3.3 BOARD INSERTION
 - 3.4 PRIORITY SELECTION
 - 3.5 CABLING (MINICOMPUTER BACKPLANE TO TAPE DRIVES FORMATTER BOARD) NON-FCC CABLING
 - 3.6 FCC CABLING

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3.0 INSTALLATION

Please read the following Installation Section carefully in addition to Sysgen Considerations (Section 8.1). We recommend running Diagnostics after the board has been configured for the correct jumper settings. Refer to Sections 4.0 thru 4.2. NOTE: If you plan on optimizing your streamer tape drive you must read Sections 7 and 8 of this manual.

3.1 UNPACKING AND INSPECTION

All parts comprising the Model 133 are shipped in one container consisting of:

a) Controller

- b) Controller to Tape Drive Cabling or FCC Cabling
- c) Diagnostic Software
- d) Technical Manual

On receipt of the Model 133 from the carrier, inspect the shipping carton immediately for any evidence of damage or mishandling in transit.

If the shipping carton is water stained or damaged, contact the carrier and shipper immediately, specify the nature and extent of the damage and request that the carrier's agent be present when the carton is opened.

Custom Systems' warranty does not cover shipping damage.

For repair or replacement of any Custom Systems product damaged in shipment, call Custom Systems to obtain Return Authorization Instructions.

3.2 CONFIGURING THE MODEL 133

To properly configure the Coupler you must select one of two Emulations (determined by your Operating System), the device code to be used and other considerations. This Manual makes reference to a 133 (6021 Emulation) and a 133A (6125 Emulation). They are the same board only the jumpers are changed.

3.2.1 6021 EMULATION

The 6021 Emulation is used by RDOS (referenced to as MTX) and can be used by AOS (referenced to as MTA). The standard (STD) jumper settings are defaulted to this Emulation (6021). Section 8.1 refers to 6021 Emulation.

NOTE: J5 enabled for streamer drives and disabled for start/stop drives.

3.2.2 6125 EMULATION (MV SERIES COMPUTERS REQUIRES 6125 EMULATION)

The 6125 Emulation is used by AOS (referenced to as MTC). RDOS does not support the 6125 Emulation. Section 8.1 refers to 6125 Emulation. To properly select 6125 Emulation perform the following steps:

1. Select 64K Word Count J2 (C to A).

2. Select Maximum Address 177777 J6 (C to A IN).

3. Select IDENT Status Disable J10 (C to B IN).

4. Select Corrected Error Disable J11 (C to B IN).

NOTE: J5 enabled for streamer drives and disabled for start/stop drives.

3.2.3 JUMPER TABLE

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Refer to Diagram 3.0.

The following jumpers are used to configure the 133 to meet a Customer's needs. (STD) indicates a Printed Circuit Line etched on the Printed Circuit Board.

Primary/Secondary Device Code	$\begin{cases} J1 (IN) & J7 (IN) = 22 & Device Code (STD) \\ 8 & 8 \end{cases}$
•	$\begin{cases} 8 \\ J1 (OUT) J7 (IN) = 62 \\ 8 \end{cases}$ Device Code
Word Count Size	$\int J2 (C + o B N) = 4K \text{ Word Count}$ $\int (C + o A OUT) \qquad Size (STD)$
	J2 (C to A IN) = 64K Word Count (C to B OUT) Size

For 6021 Emulation select 4K Word Count Size. For 6125 Emulation select 64K Word Count Size.

Density Select CAUTION: If using RDOS, J3 C to A must be in otherwise RDOS sees the unit as	J3 (C to A IN) = DIA - 4 Bit (C to B OUT) always Hi (STD)
heing improperly selected.	J3 (C to B IN) = Drive Determines (C to A OUT) Status
	J4 Factory use Only
Read Look Ahead	J5 (IN) Streamer = Read Look Ahead Enabled (STD)
J 5	(OUT) Start/Stop = Read Look Ahead Disabled

CAUTION: Streamer Drives should have Read Look Ahead enabled for optimum performance. Disable for Start/Stop drives (such as vacuum column or tension arm), cache drive, or more than one drive daisy-chained to the Coupler.

EXAMPLE OF	TAPE DRIVES	S REQUIRING READ	LOOK AHEAD DI	SABLE
Type of Tape Drive		CIPHER	KENNEDY	STC
Start/Stop	Without Vacuum Column	F100 Series	9000,9100 9600-9800	
Start/Stop	With Vacuum Column	F900 Series		
Start/Stop	Cache	F890, F891		
Start/Stop	GCR		9400	2920

Quantity of one per controller board.

Example of Streamer drives are the Cipher F880, CDC 92181, and CDC 92185 requiring read look ahead be enabled.

NOTE: Any tape drive in quantity of two or more connected to one model 133 requires read look ahead be disabled.

Extended Memory	J6 (C to B (C to A OU		Max address = 77777 (STD) 8
Address	J6 (C to A (C to B OU		Max address = 177777 8
For 6021 Emulation sele	ct Max Addr	ess = 7777	77
For 6125 Emulation sele	ct Max Addr	ess = 1777	•
Alternate Device	J7 (OUT) (J1 IN) =	20 Device Code(STD) 8
	J7 (OUT) (J1 OUT) =	60 Device Code 8
Normal Rewind Status at	BOT J9	(IN) J8	(OUT) (STD)
Fast BOT and Ready State	s J8	(IN) J9	(OUT) (STD)

= Enabled IDENT IDENT Status J10 (C to A IN) (C to B OUT) Status, Bit 11 DIA (STD) . = Disable IDENT J10 (C to B IN) (C to A OUT) Status, Bit 11 DIA Always Zero For "COPY" program and 6125 emulation disable IDENT Status. = Enabled Correctable J11 (C to A IN) Correctable Error Error Status, Status (C to B OUT) Bit 12 DIA (STD) = Disable Correctable J11 (C to B IN) (C + o A OUT)Error Status. Bit 12 DIA Always Zero

For "COPY" program and 6125 emulation disable Correctable Error Status.

3.3 BOARD INSERTION

Carefully guide the coupler board into the desired slot by allowing the edges of the board to follow the guides evenly. Use the lock tabs on the two outside corners to provide leverage when the board meets the connector. Use equal pressure on both lock tabs until the board seats firmly into the backplane connectors.

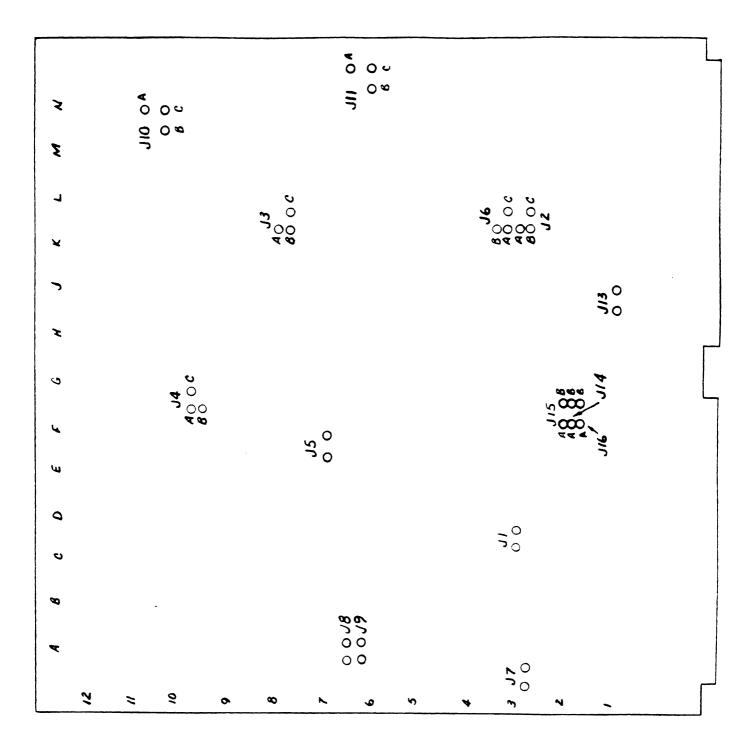


DIAGRAM 3.0

3.4 PRIORITY SELECTION

The coupler must receive two priority signals from the Data General minicomputer backplane, data channel priority in (Pin A94) and interrupt priority in (Pin A96). If there are vacant slots between the coupler and the processor, priority jumper wires must be installed to obtain priority continuity between controllers. To jumper across unused slots, connect A93 (Data Channel Priority Out) to A94 (Data Channel Priority In) and A95 (Interrupt Priority Out) to A96 (Interrupt Priority In).

3.5 CABLING (MINICOMPUTER BACKPLANE TO TAPE DRIVES FORMATTER BOARD) NON-FCC CABING

The two ribbon cables that are necessary to interface the coupler to the tape drive's formatter board, are terminated with a board edge connector on one end and a paddle board assembly on the other end. The paddle board assembly ends connect onto the minicomputer backplane pins (observe which slot the coupler occupies in order to determine the correct set of backplane pins for connection) - one on the A backplane and one on the B backplane. (Reference Figure 3.1). Make sure the backplane pins are straight first, then reference Diagram 3.2 for proper installation. Also shown in the Diagram is a typical connection of the board edge connector end to the tape drives formatter board. It is suggested that the tape drive manufacturer's manual be referenced for proper connection to the formatter board.

NOTE: Remote Switching of Density Selection is not supported. Locally switching the density is required.

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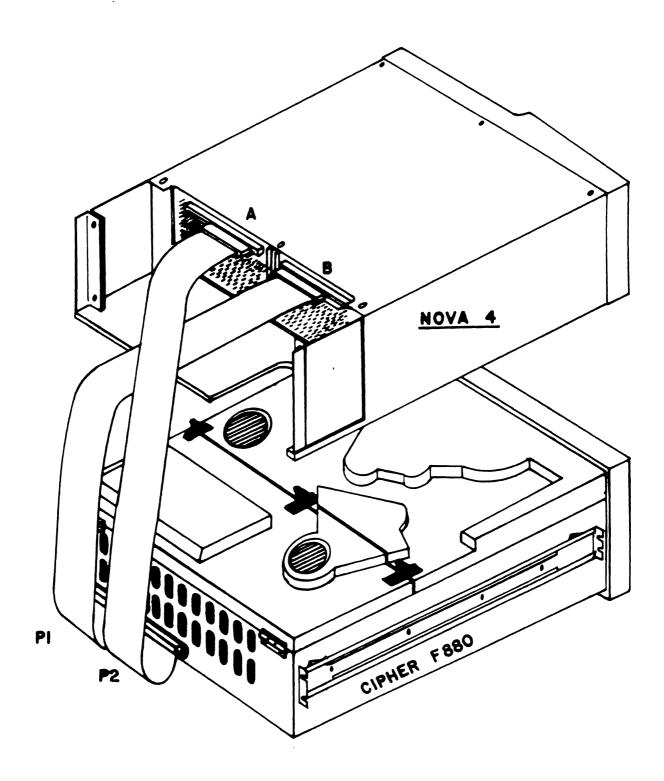
The following table can be referenced to ease the cable installation.

TAPE DRIVE	BACKPLANE A CONNECTOR	BACKPLANE B CONNECTOR
Cipher Streamer	P2	P 1
*Cipher Formatter	P 5	P4
Kennedy Streamer	P2	P 1
Kennedy Formatter	J 1	J 5
Kennedy 9400 GCR	P200	P100
CDC Streamer	J 5	J 4
Pertec	P5	P4
CDC GCR	J3	J 2
**STC 2920	P2	P1

*Requires Cipher 100 pin to two 50 pin Adapter Boards P/N 160006-001 **Requires ZETACO 2920A Adapter Board P/N 500395-000

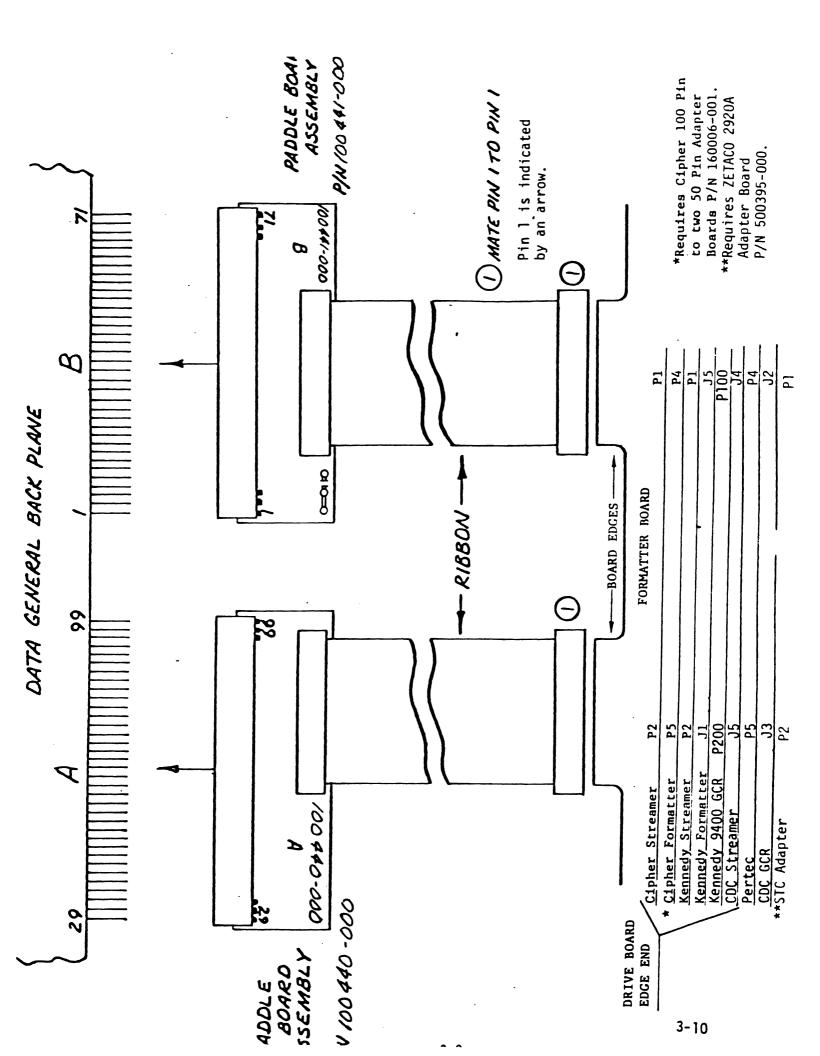
3.6 FCC CABLING

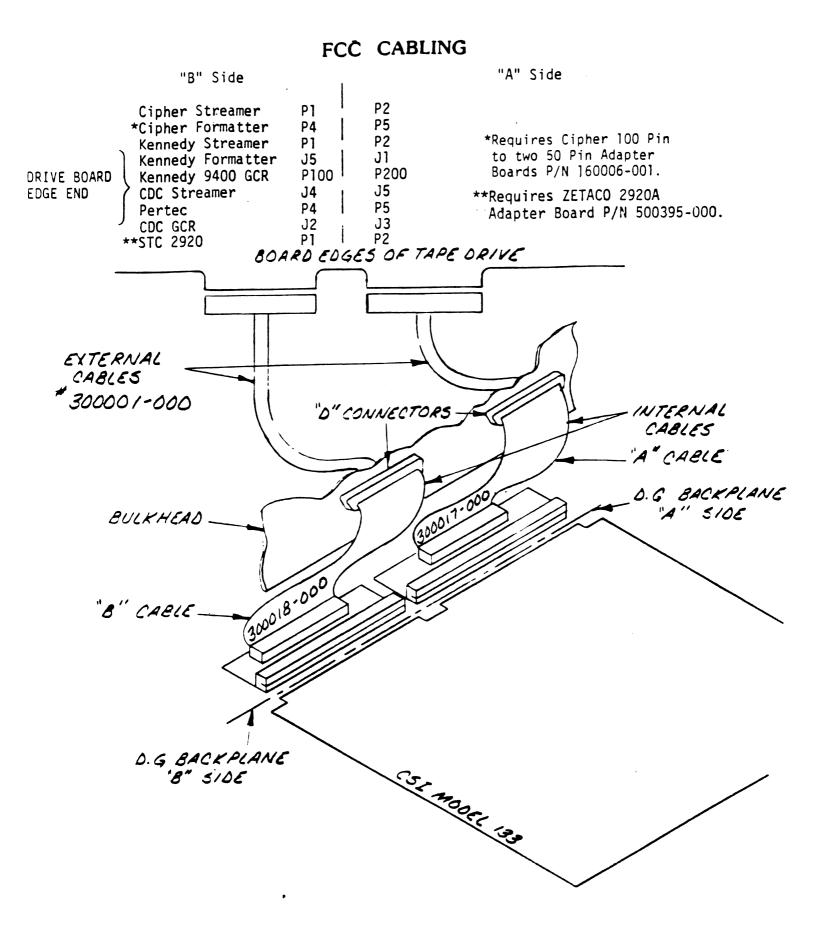
When using FCC Cabling refer to Diagram 3.3. When supplied with the External FCC Cabling marked 300001-000 mark on the white tab the "A" or "B" side as they associate with the correct side of the Backplane and its internal Cable. Example: Take either 300001-000 Cable and connect it to the "A" side of the Bulk Head and to the appropriate Tape Formatter side A and mark the white tab of the 300001-000 as Cable "A". Take the remaining Cable and mark it Cable "B".



CABLE CONNECTION EXAMPLE

DIAGRAM 3.1





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- 4.0 DIAGNOSTIC SUPPORT PACKAGE (DSP)
 - 4.1 DSP GENERAL INFORMATION
 - 4.1.1 BOOTSTRAP PROCEDURES
 - 4.1.2 LOADING PROGRAMS ONTO DISK
 - 4.2 DIAGNOSTICS
 - 4.3 RELIABILITY
 - 4.4 UTILITY PROGRAMS

4.1 DSP GENERAL INFORMATION

The Diagnostic Support Package includes a diagnostic program, a reliability program and utilities which will set a streaming tape to certain pre-defined values. In this section we will describe how to boot programs from this tape and how to load these programs onto your system disk. The operation of Diagnostics and Reliability are also described here. Please refer to the System Guidelines in Section 8 for information on the streaming mode utilities.

4.1.1 BOOTSTRAP PROCEDURES

- Mount the M242 DSP Tape on your tape drive and put the drive on-line. Be sure that the BPI setting matches the tape that you received. If your CPU has a tape drive other than the one you are testing, you can use it to boot from.
- Program Load The method of program load varies for different processors. Some of the possibilities are described here.

If your system has front-panel switches, set them to 100022 when loading from the primary tape drive, or to 100062 when loading from the secondary drive. Then press the program load switch.

For the S140 virtual console, set 11A to 100022 for the primary tape drive, or 100062 for the secondary tape drive. Then enter 100022L or 100062L.

4-1

For the S120 virtual console, enter 22H for the primary tape drive or 62H for the secondary tape drive. For a Point 4 virtual console, set the switches on the CPU board and then enter P22 or P62 for the secondary drive.

M242 Menu Display is: 3.

File #	Program
2	• MT133 COUPLER DIAG
3	UNIVERSAL MAG TAPE RELIABILITY
4	TAPEMODE (STAND-ALONE)
5	".SV & .LS" Files and any Utilities in
	RDOS DUMP Format
6	".SV & .LS" Files and any Utilities in
	AOS DUMP Format

File Number?

You should enter the number of the program you wish to run. The last item on the menu is a description of the dump files contained therein, rather than an executable program.

4.1.2 LOADING PROGRAMS ONTO DISK

The last file on the DSP tape is an RDOS dump format of the previous files, along with some streaming mode utilities. This allows you to load the programs onto your disk. We encourage you to transfer the programs to some media other than 1/2 inch tape as soon as you can. If you have only one tape drive in your system, this will prevent having to load programs from a suspect tape drive at some later time. The following CLI commands can be used to perform the load:

For RD	00S -	DIR SMDI	R %
		INIT MT	
		LOAD/A/F	R/V MT0:5
		RELEASE	MTO

For AOS - SUPERUSER ON DIR : LOAD/V/R @MTA0:6 REWIND @MTA0 SUPERUSER OFF

The files can now be booted from disk. For RDOS enter the program name in response to FILENAME?. For AOS enter the full pathname (including .SV) in response to PATHNAME?.

4.2 DIAGNOSITCS

The diagnostic program is provided to find failures that are related to the basic operations of tape control. The diagnostic assumes the magnetic tape media is not the cause of errors. You should use a good scratch tape for the testing. In the interest of saving time during the EOT portion of diagnostics, it is a good idea to use a small tape reel.

- A. Boot the diagnostics program (MT133D) from tape M242 or disk. You should see the following:
 - MT133D REVISION N
 - 133 Tape Coupler Diagnostics
 - Product of Zetaco
 - Please mount a write-enabled error free scratch tape.
 - Only the drive you are testing can be on-line.
 - Press any key to continue.

B. Load a scratch tape on the drive being tested, put the drive on-line and then press RETURN. Program displays:

- Enter drive unit number:

C. After you have entered the unit number, the program will display:
Specify the CSI model number of the unit being tested.
(6021 = 0 or 6125 = 1):

If you have a Model 133 (6021 emulation), enter 0.

If you have a Model 133A (6125 emulation), enter 1.

- D. Next you should select the recording mode to be tested:
 - If the arive is set for NRZ (800 BPI), enter 0; otherwise enter 1.
- E. As the tape drive can be either the primary or the secondary device, you must enter the device code:
 Enter device code [22]:
- F. The last request before the tests are executed is:
 - Set switch register to the desired value, then press RETURN to continue.
- G. If you wish to set any switches, refer to the program text file in the back of the manual. To proceed with the test, you must enter RETURN (NEW LINE will not do it).
- H. When diagnostics have successfully run, the word CYCLE, followed by PASS #, will display. When errors are encountered, an explanation will be displayed and the program will loop on the error. To continue beyond the error, turn on Switch 1.

4.3 RELIABILITY

The Reliablity Program is provided to find intermittent and pattern sensitive problems.

- A. Load the program from M242 tape or disk. (See DSP General Information.) Program displays:
 - UMTR Release N
 - Universal Mag Tape Reliability
 - Product of Zetaco
 - Starting Addresses:
 - 500-Reliability Test
 - 501-Interchange Test (WRITE/READ)
 - 502-Interchange Test (READ ONLY)
 - 503-Command String Interpreter
 - 504-Error Log Printout
 - Set Switch register to desired value, then press RETURN to continue.
- B. Load scratch tape on all drives to be tested. Press RETURN (not NEW LINE). You will be asked to specify the Model Number of your Tape Coupler:
 - Specify the CSI Model Number of the unit(s) being tested.
 (110=1, 120=2, 133(6021)=3, or 133(6125)=4):3
- C. You should enter 3 if the Coupler is a 133 (6021 emulation), or 4 if it is a 133A (6125 emulation). All the drives being tested must be at the same device code.
 - Enter device code [22]:
- D. Enter the device code. Program then asks:
 - Enter 0 to test CRC (NRZI only), otherwise enter 1.

- E. Specify the recording mode. Program then asks:
 - Enter 1 if the controller will be run in an AOS system, otherwise enter 0.
- F. The last message reminds you to mount your scratch tapes:
 - Mount scratch tape(s). Press RETURN to continue.
- G. Press RETURN (not NEW LINE). The Reliability tests will begin. While the program is running, you should press the SPACE BAR to display the current statistics of READS, WRITES and ERRORS.

4.4 UTILITY PROGRAMS

The Utility Programs in the DSP for M242 all concern streaming mode drives. If you have a streaming tape, you should read the System Guidelines in Section 8 for information on optimizing the performance of the drive.

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5.0 TROUBLESHOOTING

RMA INFORMATION

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5.0 TROUBLESHOOTING

Selftest tests all the internal functions of the controller board once for every time power is applied to the board. The test takes approximately 14 seconds to complete. If selftest passed the red LED will go out. If a failure was detected, the LED will blink a repetitious code indicating which circuit on the board has a problem. Looping on error is achieved by depressing the I/O reset switch while the error code is being reported. Reference Table 5.1 for Self Test Error Codes.

CODE	TEST	POSSIBLE FAILURE	SHEET # OF PRINTS
1	Micro Processor Ram Test	Read data did not compare with what was written 6810 (238 x 8 Ram)	. 8
4	FIFO Buffer Test	The READ data did not compare with what was written. 2114's (1024 x 8 Ram)	13,14,15 16,17
5	Address Turnover Test	Address turnover flip-flop did not set when expected. (Should set after 1024 RD/W buffer references	14 /T
7	Data Late Test	Data late flip-flop was set on power on or it did not s after one more reference wi a full buffer	set .
8	EPROM Check Sum	Check sum calculation did r agree with the data in the check sum location (replace EPROM)	

SELF TEST ERROR CODES TABLE 5.1 Any command issued to the Tape Coupler will cause self test to abort and if not aborted, the Coupler will appear not ready to the system until selftest successfully complete CAUTION: When using questionable or marginal tape on GCR models you may encounter bad records. Insure any bad tapes are clearly marked. We recommend using high quality 6250 certified tape.

CUSTOMER SERVICE

Our warranty attests the quality of materials and workmanship in our products. If malfunction does occur, our service personnel will assist in any way possible. If the difficulty cannot be eliminated by use of the following service instructions and technical advise is required, please phone Custom Systems giving the serial number, board name, model number and problem description. You will be placed in contact with the appropriate technical assistance.

PRODUCT RETURN

Pre-return Checkout.

If controller malfunction is suspected, the use of test software is needed to determine if the controller is the problem and what in particular is wrong with the controller. The tests applicable to this board are listed on the next page of the manual. Please run the test sequence BEFORE considering product return.

Returned Material Authorization.

Before returning a product to Custom Systems for repair, please ask for a "Returned Material Authorization" number. Each product returned requires a separate RMA number. Use of this number in correspondence and on a tag attached to the product will ensure proper handling and avoid unnecessary delays.

Returned Material Information.

Information concerning the problem description, system configuration, diagnostic program name, revision level and results (i.e. error program counter number) should be included with the returning material. A form is provided for this information on the next page of the manual.

Packaging.

To safeguard your materials during shipment, please use packaging that is adequate to protect it from damage. Mark the box "Delicate Instrument" and indicate the RMA number(s) on the shipping label. (include with returning material)

MATERIAL RETURN INFORMATION

All possible effort to test a suspected malfunctioning controller should be made before returning the controller to Custom Systems, Inc. for repair. This will: 1) Determine if in fact the board is defective (many boards returned for repair are not defective, causing the user unnecessary system down-time, paperwork and handling while proper testing would indicate the board is working properly). 2) Increase the speed and accuracy of a product's repair which is often dependent upon a complete understanding of the user checkout test results, problem characteristics, and the user system configuration. Checkout results for the Magnetic Tape Coupler should be obtained by performing the following tests. (Include error program counter number's and accumulator contents if applicable.)

TEST

RESULTS

1. MT 133D DIAGNOSTIC 2. UMTR RELIABILITY

Other tests performed:

Please allow our service department to do the best job possible by answering the following questions thoroughly and returning this sheet with the malfunctioning board.

- 1. Does the problem appear to be intermittent or heat sensitive? (If yes, explain).
- What operating system are you running under? (AOS, RDOS, DDOS, DTOS).
- 3. Describe the system configuration (i.e. peripherals, 1/0 controllers model of computer, etc.).
- 4. Has the controller been returned before? Same problem?

To be filled out by CUSTOMER:

Model #: Serial #: RMA #:

Retuned by.

(company name)

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6.0 PROGRAMMING NOTES

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6.1	INSTRUCTION	FORMAT
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6.1.1 SKIP INSTRUCTIONS

- 6.2 DOA SEND COMMAND
- 6.3 DOB LOAD STARTING MEMORY ADDRESS
- 6.4 DOC LOAD WORD COUNT
- 6.5 DIA READ STATUS
- 6.6 DIB READ CURRENT ADDRESS
- 6.7 DIC READ CHECK CHARACTERS (MAINT. USE ONLY)
- 6.8 COMMAND DESCRIPTIONS
 - 6.8.1 READ
 - 6.8.2 WRITE
 - 6.8.3 WRITE END OF FILE
 - 6.8.4 REWIND
 - 6.8.5 SPACE FORWARD
 - 6.8.6 SPACE REVERSE
 - 6.8.7 ERASE
- 6.9 DATA CHANNEL OPERATION (RESULTING FROM A READ OR WRITE COMMAND)

. -

CAUTION: When using questionable or marginal tape on GCR models you may encounter bad records. Insure any bad tapes are clearly marked. We recommend using high quality 6250 certified tape.

6.1 INSTRUCTION FORMAT

Symbolic Form for 1/0 Instructions DXXF AC.MTA DXX = DOA, DOB, DOC, DIA, DIB F = FUNCTION: C (CLEAR) - Clear all error flags (except EOT/BOT) and done and busy flip-flops. If for some chance that the system issues a clear pulse during the command operation, the Coupler will abort the command and done will not set. S (START) - Clears all errors except illegal, set busy and clear done. Command that was issued by a DOA will be executed. P (PULSE) - Not used. AC = ACCUMULATOR: 0, 1, 2 OR 3

MTA = DEVICE CODE: PRIMARY - 22 OCTAL SECONDARY - 62 OCTAL

BINARY REPRESENTATION

					-					_				14	
0	1	1	A	С	0P	COD	E	FU	NC		DEVIC	CE	CODE	(MTA)	

INTERRUPT MASK BIT = 10

6.1.1 SKIP INSTRUCTIONS

Used to poll the state of the Coupler board (command is done or busy). If the skip condition is met the next instruction is skipped, else the next instruction is executed.

SKPBZ	MTA	-	SKIP	IF	BUSY	FLIP-FLOP	IS	CLEAR.
SKPBN	MTA	-	SKIP	١F	BUSY	FLIP-FLOP	15	SET.
SKPDZ	MTA	-	SKIP	IF	DONE	FLIP-FLOP	15	CLEAR.
SKPDN	MTA	-	SKIP	IF	DONE	FLIP-FLOP	IS	SET.

6.2 DOA - SEND COMMAND

DOAF AC, MTA

0	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1		1	A	c	0	1	0		F			DEVIC	E COI	DE	
AC																
0	1	2	3	4		5			6		7		8		9	
	-			I		0.5.4										

NOT	USED	STREAMER MODE		DENSITY SELECT		EVEN
10	1	11	12	13	14	15

COMMAND (0-7)

UNIT SELECT (0-7)

UNIT SELECT: USED TO SELECT ONE OF A POSSIBLE EIGHT TAPE DRIVES

- 0 READ 1 - REWIND 2 - NOT USED
- 3 SPACE FORWARD
- 4 SPACE REVERSE
- 5 WRITE
- 6 WRITE END OF FILE
- 7 ERASE

¹ O

EDIT

The command and unit select will default to read and unit zero after a clear pulse or IORESET.

The Coupler may address up to eight tape drives but only one command can be done at a time with the exception of rewind.

STREAMER MODE SELECT BIT 5 = 0

RES

EVEN

5 6 7 8 9

DEN

- EDIT MODE (BIT 6) Use to re-write records within blocks. This bit is an option. It is generally not necessary unless the tape unit is a primary storage device or key to tape applications.
- DENSITY SEL (BIT 7) (Disregard for RDOS, see Jumper (J3) Table Section 3.2.3) Selects PE if one, NRZI if zero. The formatted drive must accommodate this feature as well.

(BIT 8) - Reserved

EVEN PARITY (BIT 9) - Maintenance Use Only

STREAMER MODE SELECT BIT 5 = 1

5	6	7	8	9	
1	LIMIT 1	LIMIT	HIGH SPEED	DYNAMIC GAP	

Applicable to streamers only. NOTE: It is not necessary to re-issue streamer mode select if the same configuration is desired for successive commands. A start pulse is not required to select the streamer mode.

HIGH SPEED (BIT 8) - If set to a one, select high speed tape motion (100 IPS). If this bit is zero, low speed will be selected. DYNAMIC GAP (BIT 9) - If set to a one, write dynamic inter-record written. This increases the re-instruct period. It should be noted that a loss of usable data media may result with this command. If this bit is zero, nominal interrecord gap is selected.

NOTE: If the Cipher F880 Microstreamer is selected, the gap will dynamically be lengthened depending upon when the next command is issued. The Kennedy 6809 Streamer will lengthen the gap by an additional .6 inch, thereby increasing the re-instruct period by 6 millisec.

If a Cipher Streamer is used, gap length limits (Bits 6 and 7) can be established by the controller. This may be useful if there is long time intervals occasionally before the next write command is issued (between 1 and 4 seconds). The time limits could prevent outrageously long record gaps. If the selected limit is not met, the unit will simply reposition back to a nominal gap length. The following table indicates the re-instruct limits.

BIT 6

LIMIT 1	LIMIT O	LIMIT (MS = MILLISEC.)
0	0	75 MS
0	1	150 MS
1	0	300 MS
1	1	RESERVED

LIMIT TABLE

BIT 7

These modes, high speed and dynamic gap, will remain as selected until another DOA with streamer mode select (BIT 5) = 1 is issued again. The default condition is normal gap and low speed. Default is established on power on or IORESET switch depressed.

6.3 DOB - LOAD STARTING MEMORY ADDRESS

DOI	BF	AC,	MTA												
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1	1	A	с	1	0	0		F		D	EVIC	E CO	DE	
AC															
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0				CO	NTE	NTS	0F	SE	LEC	TED	ACCU	MULA	TOR		and compared on the

The contents of Selected Accumulator will be loaded into the controllers address counter. This will become the starting address for the next command that requires the data channel (READ or WRITE).

6.4 DOC - LOAD WORD COUNT

DO	CF	AC,	MTA												
0	1	2	3	4	5	б	7	8	9	10	11	12	13	14	15
0	1	1	A	С	1	1	0		F		D	EVIC	E CO	DE	
AC															
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		R R				CO	NTE	NTS	OF	SEL	ECTE	D AC	СИМИ	LATO	R

Jumper option on word counter allows record sizes of up to 64K (not standard with RDOS software).

Program must place two's complement of desired word count into selected accumulator before this instruction is executed.

Spacing Forward/Reverse - Place two's complement of the maximum number of records to be spaced.

6.5 DIA - READ STATUS

DI	AF	AC,	MTA												
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1	1	A	С	0	0	1		F		D	EVIC	E CO	DE	

AC

0	1	2	3	4	5	6	7
ERROR FLAG	1			DENSI- TY		1	
8	9	10	11	12	13	14	15
LOAD POINT	9 TRI			CORRECT- ED ERROR			UNIT READY

Bits 11 and 12 are for phase encoded only.

STATUS BITS:

0 ERROR FLAG - A condition was detected by the controller board that may require attention. If Bit 1, 3, 5, 6, 7, 8, 10 or 14 are a one, the error flag will be set to a one.
1 DATA LATE - Data Channel requests were not honored in time to keep up with device, resulting in one or more lost data words. This condition will not occur until the FIFO buffer overflows. 6-6

2 REWINDING - Selected unit is rewinding.

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- 3 ILLEGAL A start function is asserted under one of the following cases:
 - Write protect is on (no write ring installed and the command that was issued prior to the start was a write, erase or write file mark.
 - Space reverse command was issued and unit is at load point.

3) Unit is not ready.

NOTE: No tape motion will take place and done will set. Only clear function or IORESET will clear illegal.

- 4 DENSITY Always a one in a standard configuration. May be optionally used to differentiate between PE mode (one) or NRZI mode (zero) if controller is connected to a dual embedded formatter.
- 5 PARITY One of two conditions possibly occurred. ERROR Even vertical parity was detected by the controller or a corrected error occurred during a write command.
- 6 END OF The selected unit is at or beyond the EOT TAPE mark. A space reverse or rewind command will clear this bit.

- 7 FILE MARK Will be set to a one when the unit detects the presence of a file mark during a write file mark command (READ AFTER WRITE) or when a read or spacing command passes over a previously written file mark.
- 8 LOAD POINT Selected unit senses a load point marker (BOT).
- 9 9 TRACK Always a one.
- 10 BAD TAPE Set to a one by the occurrence of one of the following cases:
 - 1) PE only, did not detect an ID burst when reading from load point.
 - PE only, tape was in a runaway condition (reading an erased tape).
 - 3) PE only, multi-track dropout.
 - 4) PE only, uncorrectable parity error.
 - 5) PE only, non-zero character in postamble.
 - 6) Excessive skew.
 - PE only, loss of data envelope prior
 to postamble detection.
 - 8) Vertical parity on cable in error.
 - 9) NRZ only, vertical parity error on data character.
 - 10) NRZ only, longitudinal parity error.
 - 11) NRZ only, CRCC parity error.
 - 12) NRZ only, improper record format.
 - 13) NRZ only, CRC error.

RETRIES MAY CORRECT THE ABOVE PROBLEMS

11 ID BURST - PE only, set to one if the unit detects an identification burst on a forward motion command from load point.

> If detected during a READ command, the tape media was written by a phaseencoded transport.

A write command (write or write file mark) issued at load point will cause the unit to automatically write an ID Burst.

12 CORRECTED - PE only, if this bit is a one after a PAR ERROR write command, the parity error flag will also be set to a one and the software should backspace and re-write the record.

> If it occurs after a READ command, it is not necessary to re-read the record, the error is probably caused by the media itself (such as dust, slightly damaged tape or it was poorly written), and the data has been corrected.

13 WRITE - A write ring was not installed on the PROTECT tape reel.

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14 ODD RECORD - An odd number of characters were read READ within the record.

- 15 READY The selected tape unit is ready. The following conditions must be satisfied before this bit is a one:
 - 1) Unit is online.
 - 2) Not rewinding.
 - 3) Controller is not busy.
 - 4) Ready line from unit must be received.
 - 5) Selftest is done.
- 6.6 DIB READ CURRENT ADDRESS

DI	DIBF AC,MTA														
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1	1	A	С	0	1	1		F		D	EVIC	E CO	DE	
AC															
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	6		CUR	REN	IT C	ONT	ENT	S 0	FΤ	HE A	DDRE	SS C	OUNT	ER	

The seleted accumulator will contain the current contents of the address counter after the execution of this instruction.

READ WRITE RECORD - Contains the memory address to where the next data word transfer will take place. The memory address counter is incremented by one after each data channel transfer. SPACING FORWARD/REVERSE - The address counter becomes a record counter on a space forward or reverse command. The difference between the contents of the counter before and after the space command will indicate the number of records spaced over.

6.7 DIC - READ CHECK CHARACTERS (MAINTENANCE USE ONLY)

DIC	CF	AC,	MTA												
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1	1	A	С	1	0	1		F		D	EVIC	E CO	DE	
AC															
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CRCC										LRCC					

This command is useful for testing to make sure that a NRZ drive is generating the proper check characters. The check characters will be available (NRZ Only) after every read record command. This command will only be necessary for diagnostic purposes. Since a phase encoded drive does use check characters, a DIC will simply transfer the last two characters read from a record into the selected accumulator.

6.8.1 READ

DOA Command is read and a start pulse was issued.

Start sets busy, coupler then sends a read forward command to the tape unit. Tape unit will ramp up to speed and transfer data to the coupler when it reaches the data field. Every two bytes sent by the unit will be transferred to the mini's memory as one complete word. After the transfer the address and word counter will increase by one. Tape motion will continue until a record GAP is reached (unless "ON THE FLY" is achieved). Word transfer to the mini continues until the word count limit is met or the last word of the record is sent via the data channel.

If the record is a file mark, tape motion will cease and no data transfers on the data channel will $\frac{1}{1000}$ take place.

Done will set when the command is finished or an error has occurred.

Possible Errors:

- Selected unit is not ready (rewinding, off line coupler busy or drive not in system.
- 2) Hard or corrected error.
- 3) Data Late.

NOTE: READ LOOK AHEAD FEATURE

The probability of one Read record command following another is very high. To take advantage of this likelihood, the 133, once a Read command is received, will issue a second Read Command to the drive. This feature dramatically increases the amount of time that the minicomputer has to issue the actual Read Command. (The gap length, record postamble and 1024 character butfer is what contributes to the extend time.)

If the next command was not a Read, the coupler will abort the Read Look Ahead and reposition the tape and execute the desired command.

In all cases the Read Look Ahead feature is transparent to the User. It is accomplished automatically by the coupler.

6.8.2 WRITE

A Write Command is issued by doing a DOA with a Start Pulse.

Busy sets and the coupler asserts a write forward command to the tape unit. Tape unit ramps up to speed and continues to write bytes of data until the word count limit is reached and the FIFO is empty. Data channel operation is the same as a read except words are read from the mini's memory instead of written after the last byte is written. The tape unit will write its format data (postamble if PE, CRC/LRC is NRZ) and record gap if "ON THE FLY" is not achieved, tape motion will cease.

Done will set when the command is finished or an error has occurred.

Possible Errors:

1) Same as Read Command.

NOTE: Since, normally, a Read or Write Command will ultimately result in data channel activity, it is imperative that the word counter (DOC) and address counter (DOB) are initialized prior to the start pulse.

6.8.3 WRITE END OF FILE

Start will set busy (illegal and done sets if no write ring) and the tape unit will move forward and write one file mark.

PE FORMAT - A gap approximately 3.5 inches long before the file mark followed by a record gap.
NRZ FORMAT - A single character record with bits in tracks 3, 6 and 7 set for both the data character and the LRCC. The CRC character will contain all zero bits.

Done sets when the command is completed.

6.8.4 REWIND

Start does not set busy, selected tape unit will rewind at high speed. The unit will not be ready until the tape is stopped at the BOT marker. Other units are available for commands while this unit is rewinding. Done does not set when command is completed.

6.8.5 SPACE FORWARD

When start sets busy, forward tape motion starts. When unit reaches a record gap the coupler then makes the decision whether to continue onto the next record gap or to stop tape motion. It will stop under any of the following conditions - word count overflowed, file mark was detected or last record spaced contains EOT marker. The word counter should be loaded with two's complement of the desired number of records to be spaced prior to start pulse. The maximum number of records to be spaced is 4095 (64K is optional). Done will set after command completion and the file mark status bit will be set if a file mark was encountered. If the drive is a streamer type, high speed will be selected automatically after four records. This greatly increases file access time.

6.8.6 SPACE REVERSE

Start sets busy. If the selected tape unit is at load point, no tape motion will take place. Done and illegal will set. If not at a load point, tape motion will continue until the word count overflows, a file mark is encountered or load point is reached. The word counter is handled the same way as the space forward command. When the command is completed, Done will set. If the coupler is connected to a streamer type of drive, high speed will be selected automatically after ten records.

6.8.7 ERASE

When start sets busy and a write ring is on the reel, the tape unit will erase approximately 3.5 inches of tape. The amount of tape erased varies somewhat with different drive manufacturers. Refer to the drives manual for the actual amount. Done sets when the command is completed.

DATA CHANNEL OPERATION (RESULTING FROM A READ OR WRITE COMMAND) 6.9 Data Channel Operations take place during a read record (providing an end of file is not encountered) or write The word counter and address counter must be record. initialized before a start function (DXX S AC,MTA) is asserted (see 6.3 DOB and 6.4 DOC). If a legal (see DIA Status Bit 3) read or write command was issued prior to a start function, tape motion will commence. Data transfers will be encountered between the minicomputer and the magnetic tape drive. One data channel request is issued for every word (16 bits) transfers on the drive end. If the mini cannot respond to a request before the next word is tranferred by the drive, the coupler will store it into a FIFO buffer until the request is acknowledged. The size of the buffer covers the data channel latency period. But, if for some remote chance that the buffer overflows, the coupler will then abort the command and set done, error flag and data late (see 6.5 DIA). For each word transferred via the data channel, the word counter and address counter will increase by one data channel. Transfers will continue until the word counter overflows or an end of record is reached on a read command. A maximum word count may be used for a read command if the record size is unknown.

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7.0 STREAMING MODES

7.1 RE-INSTRUCT TABLE

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7.0 STREAMING MODES

The most important issue when referring to streaming, is the term "RF-INSTRUCT PERIOD". This is the amount of time the specific mag tape drive gives the controller to assert the next command before tape motion stops. lf the next command issued (provided it is of the same type and direction) is met, tape motion will continue at the same rate for the next record. This is normally referred to as "ON THE FLY" operations. If "ON THE FLY" is not established, then it is referred to as start/stop action (tape motion ceases within record gaps). With vacuum column or tension arm mag tape drives, start/stop times are rather fast in the order of about 8 millisec. However, with streamer drives, the high cost mechanisms necessary for fast start/stop ramp times are eliminated. Hence. start/stop times may take more than one second. If the next command is not issued during the re-instruct period with a streamer drive, it will then enter what is called a repositioning cycle. This cycle is necessary because the streamer cannot stop within the nominal inter-record gap length (approx. .6 inches). Therefore, after it decelerates forward it must accelerate in reverse, and finally decelerate in reverse. The repositioning cycle is longer the faster the tape speed, therefore, most streamers offer a low speed (25 IPS or 12.5 IPS) along with the high speed (100 IPS).

If the program that is controlling the data transfers to the mag tape does not issue commands during the normal re-instruct period, repositioning takes place. Options are available to remedy this situation to extend the re-instruct period. One option would be to use a lower speed. Another would be to lengthen the record gap after a write command, but this would sacrifice media (which may prove to be useful providing the gaps are not too long).

7.1 RE-INSTRUCT TABLE

CIPHER RE-INSTRUCT TIMES:

SPEED	GAP LENGTH	RE-INSTRUCT TIME
25 IPS	NORMAL (.6")	16 MS
100 IPS	NORMAL (.6")	4 MS
25 IPS	VAR. LENGTH	UP TO 4 SEC.
100 IPS	VAR. LENGTH	UP TO 4 SEC.

KENNEDY RE-INSTRUCT TIMES:

SPEED	GAP LENGTH	RE-INSTRUCT TIME
12.5 IPS	NORMAL (.6")	START/STOP ONLY
100 IPS	NORMAL (.6")	4.5 MS
100 IPS	LONG GAP (1.2")	10.5 MS

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8.0 SYSTEM GUIDELINES

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- 8.1 SYSGEN CONSIDERATIONS
- 8.2 STREAMING-MODE UTILITY
 - 8.2.1 RDOS EXECUTABLE UTILITIES
 - 8.2.2 AOS EXECUTABLE UTILITIES
 - 8.2.3 STAND-ALONE UTILITIES
 - 8.2.4 OTHER OPERATION SYSTEMS
- 8.3 USER-WRITTEN PROGRAMS
- 8.4 PERFORMANCE CHART

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8.0 SYSTEMS GUIDELINES

8.1 SYSGEN CONSIDERATIONS

The user must correctly specify the Tape Coupler Name at Sysgen time. The correct Tape Name depends on the Operating System and whether you are running with the coupler set as a 133(6021) or as a 133A(6125). The situation is as follows: RDOS Sysgen - CSI Tape Coupler 133(6021) is MTX. CSI Tape Coupler 133A(6125) is not supported.

- AOS Sysgen CSI Tape Coupler 133(6021) is MTA. CSI Tape Coupler 133A(6125) is MTC.
- Other CSI Tape Coupler 133(6021) should be the same as the emulation 6021.
 - CSI Tape Coupler 133A(6125) should be the same as the emulation 6125.

8.2 STREAMING MODE UTILITIES

CSI provides utility programs which can help optimize the performance of streaming tape drives. These utilities are supplied on the M242 tape from Custom Systems. Please refer to Section 4 for information on loading these programs onto your disk. For Cache and Start/Stop drives, more than one drive daisy chained to the Coupler, or a utility other than a backup, these utilities are not useful and you should skip the rest of this section unless you have a streaming tape drive.

To decide how and when you want the streaming mode set, you should refer to the Performance Chart at the end of this section. For a particular System Tape Routine and your drive speed, the Chart shows the most efficient set of parameters to select. The programs described in the remainder of this section will set the tape

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speed and inter-record gap to pre-defined values. The default settings are low speed and nominal gap. Be aware that resetting the CPU will cause any tape settings to be lost. Thus any time the CPU is reset it is initially set for low speed and nominal gap.

8.2.1 RDOS EXECUTABLE UTILITIES

There are five utility programs which run under RDOS. The programs will set the tape drive as follows:

LNG = Low Speed, Nominal Gap LDG75 = Low Speed, Dynamic Gap 75 MS, Min Gap Nominal HNG = High Speed, Nominal Gap HDG75 = High Speed, Dynamic Gap 75 MS, Min Gap Nominal HMG90 = High Speed, Dynamic Gap 300 MS, Min Gap 90 MS

There are three files associated with each of these programs: Executable Program File (-.SV), a Text File (-.TX) which describes the most recent configuration, and a Command Line File (-.MC) which runs the program and displays the configuration.

You must first load these programs from the M242 tape onto your disk. After determining which program you want to run, just enter the program name.

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8.2.2 AOS EXECUTABLE UTILITIES

There are five utility programs which run under AOS. The programs will set the tape drive as follows: LNG = Low Speed, Nominal Gap LDG75 = Low Speed, Dynamic Gap 75 MS, Min Gap Nominal HNG = High Speed, Nominal Gap HDG75 = High Speed, Dynamic Gap 75 MS, Min Gap Nominal HMG90 = High Speed, Dynamic Gap 300 MS, Min Gap 90 MS

There are three tiles associated with each of these programs: Executable Program File (-.PR), a Text File (-.DC) which describes the most recent configuration, and a Command Line File (-.CLI) which runs the program and displays the configuration.

You must first load these programs from the M242 tape onto your disk. After determining which program you want to run, just enter the program name.

8.2.3 STAND-ALONE UTILITY

TAPEMODE is a stand-alone utility which will configure the Coupler without having to use an Operating System. This is useful prior to running DG stand-alones, such as PCOPY. TAPEMODE will configure the MT133 Coupler to any desired configuration.

To use TAPEMODE, load the program from M242 tape or disk (see DSP General Information Section 4). First you must answer the questions to configure the Coupler as desired. After the tape has been configured, TAPEMODE asks for the device code for re-booting. The auto-boot function is provided to prevent the operator from inadvertently cancelling the configuration (RESET switch).

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8.2.4 OTHER OPERATING SYSTEMS

The user must create programs to configure the Coupler or a specific configuration must be added to the drivers. A Data Out A (DOA) instruction with the desired configuration bits set in the proper accumulator is all that is needed to configure/re-configure the Coupler. The DOA instruction is fully described in Section 6.2.

8.3 USER-WRITTEN PROGRAMS

If you have non-DG tape utilities which do not keep the drive streaming (drive repositions), then the following could be done.

For Streaming on Writing	- Increase gap dynamically
For Streaming on Read	 Increase minimum gap length when writing
lf in High Speed	- Switch to low speed
NOTE: Increasing the gap	length will use additional tape.

8.4 PERFORMANCE CHART

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		25/100 TAPE	12.5/100 TAPE
RDOS	MDABS MDSAVE ETC.	Low Speed Nominal Gap	Low Speed Nominal Gap
RDOS	XFER	Low Speed Dynamic Gap 75 MS	Low Speed Nominal Gap
RDOS	DUMP Load	Low Speed Dynamic Gap 75 MS	Low Speed Nominal Gap
RDOS	FDUMP Fload	Low Speed Nominal Gap	Low Speed Nominal Gap
RDOS BURST	DUMP LOAD	High Speed Dynamic Gap 75 MS	High Sp eed Dynamic G ap 75 MS
AOS	COPY	Low Speed Nominal Gap	Low Speed Nominal Gap
AOS	DUMP LOAD	Low Speed Dynamic Gap 75 MS	Low Speed Nominal Gap
AOS PCOPY		High Speed Nominal Gap	High Speed Nominal Gap

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	;							

	j.							
	; 							
	; DESCRIPTION: MT133 TF	PE COUPLER L	VIAGAUS/IC					
	i .							
	PRODUCT OF ZETHCO 198 ************************************		*****					
	TITL MT133D							
000001 000001								
000001 000001								
	1. PROGRAM NAME:							
	> 2. REVISION HISTOR	(T)						
) REV.							
		03/24/81 05/27/81	DISK BOOTABLE					
	, 01 , 02	12/10/81	ALLOW FOR STATUS OF OTHER					
			DRIVES					
	7 83 7 84	03/25/82 06/20/83	KSS GET RID OF AUTO INC STUFF					
	/ (PREL.) 05.00	08/83	-UPGRADE TO USE DTOS REV 6.					
			SOME TESTS RUN DIFFERENTLY. (BUILT FROM MT1100 PROGRAM)					
			-10 BURST NO LONGER REQUIRED					
) I		ON PE NOR EXCLUDED ON NON-PE.					
	2 1		-MODS FOR 6125 EMULATION(110A); BIT 11 (ID EURST) MUST = 0					
	1		DOB/DIB (TEST A4) USES ALL 15					
	9 9	9/83	B17S.					
	1		INCLUDE TEST NUMBER AND SUBTEST					
	<i>,</i>		CHARACIER FOR ALL TESTS. USED TO DISPLAY CURRENT TEST NUMBER					
	3		AND TO SUGGEST INSTALLATIONAL					
	I		OR OPERATIONAL CAUSES FOR SOME ERRORS. (SEE RIN SUGJEST.)					
	2 2		FIXED BUGS:					
	<i>i</i>		- WAIT EXPECTS THE IN-LINE PARM					
	i i		TO BE DIRECT NOT INDIRECT. - MODIFY ALL . MTA INSTRUCTIONS					
	•		WAS NOT COING SO TO THE LAST					
	2 2		FEW INSTRUCTIONS. - SOFT SW 1 ON SHOULD NOT FORCE					
	1		ERROR DISPLAY ON EACH ROUND.					
	9 		- REVISED CRL?B (IN DLIB) TO					
	,		ALLOW FOR ANY OF 3 CLOCKS:					
			CLOCK 1/2 OR 3. THIS PROGRAM USING CLOCK 1 (10 HERTZ).					
	i i		- MOVED MOST DATA TO END OF					
	j		LISTING SO THAT THE MODIFY					
	1		DEVICE CODE ROUTINE NOT DOING					

6662 MT133		
01		07 03/22/34
	j.	130 TO 133 AND PROPER DEVICE
02 92	'	
03	;	CODE CHANGE ROUTINE.
84	÷3.	MACHINE REQUIREMENTS
05	;	3.1 NOVA OR ECLIPSE FAMILY CPU'S.
96		3.2 MININUM OF 16K MEMORY.
07	;	3. 3 ZETACO 133 (6021 OR 6125) MAG TAPE COUPLER BOARD,
88	j.	WITH A FORMATTED TAPE DRIVE.
09	<i>j</i>	3.4 TELETYPE OR CRT AND CONTROLLER.
10	,	
11	4.	TEST REQUIREMENTS
12	, i.	N/A
13		1997 17
	, c	(1) MMO (2)
<u>j</u> 4	<i>i</i> 5.	SUMMARY
15	j.	THIS PROGRAM IS A HARDWARE DIAGNOSTIC FOR THE ZETACO MODEL 133
16	j.	(6021 OR 6125) TAPE CONTROLLER. THE DEVICE CODE CAN BE 29 THRU
17	j.	76. ONLY ONE READY, WRITE ENABLED DRIVE CAN BE ON LINE AT A TIME.
18	j.	
19	76.	RESTRICTIONS
20	j.	
21		ONLY ONE(1) DRIVE CAN BE ONLINE AT ANY TIME. THE DEVICE
		CODE MUST BE 20 THRU 76. ALL RESPONSES TO PROGRAM REQUESTS
23		MUST BE ANSWERED PROPERLY TO CONTINUE THE SEQUENTIAL
24	,	
	<i>!</i>	TESTING OF THE TAPE DRIVE.
25		PROGRAM DESCRIPTION/THEORY OF OPERATION
26	j.	7.1 INITIALIZATION
27	j.	7.1.1 I/O MODULE INITIALIZED
26	i i	7.1.2 TEST SELB LINE SET/ IF LINE SET IR-
29	,	RECOVERABLE ERROR. PROGRAM HALTS AT
<u>.</u> 0	,	EHALT.
31		1. SELECT UNIT NUMBER
2		2. DEVICE CODE CHANGE
	,	3. SET SUFT SWITCH REGISTER
	1	
34	j.	7 2 FRELIMINARY TESTS
35	÷	7 2 1 - TEST A1 - TEST SYSTEM SELD LINE.
36).	7. 2. 2 TESTS A2 AND A3 - TEST CONTROLLER BUSY
24 24		
<u> 18</u>		AND DONE STATUS
- Q	,	AND DONE STATUS 7 2 D TESTS A4 THRU A8 - TEST FOR UNIT SELECT
	, , ;	
39	, , ,	7 2.3 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY
39 40	, , ,	7 2.3 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER.
79 40 41	; ; ;	7 2.2 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND
79 40 41 42)) ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START
79 40 41 42 42) 	 7 2. D TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2. 4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND.
29 40 41 42 42 42 43) , , , , ,	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION
29 40 41 42 42 42 44 45) , ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND
29 40 41 42 42 44 45 46) , ; ; ; ; ;	 7 2.3 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS.
29 40 41 42 42 44 45 46 47) , ; ; ; ;	 7 2.3 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER
29 48 41 42 42 44 45 46 47 48) , ; ; ; ; ;	 7 2.3 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS.
29 40 41 42 42 44 45 46 45 46 47 48 49) 	 7 2.3 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER
29 48 41 42 42 44 45 46 47 48) , , ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA
29 40 41 42 42 44 45 46 45 46 47 48 49) , , ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT.
29 40 41 42 42 44 45 46 47 48 49 50 51	, , , , , , , , , , , , , , , , , , , ,	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.5 STATUS BIT TESTS
29 40 41 42 42 44 45 46 47 48 49 50 51 52	, , , , , , , , , , , , , , , , , , , ,	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4.5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5.1 TEST A24 AND A25 - TEST FOR ILLEGAL
29 40 41 42 42 44 45 46 47 48 49 50 51 52 53	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4.5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5.1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING.
29 40 41 42 42 44 45 46 47 48 49 50 51 52 53 53	, , , , , , , , , , , , , , , , , , , ,	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4.5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5.1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5.2 TEST A26 - TEST FOR EOF STATUS BIT
29 40 41 42 42 44 45 46 47 48 49 50 51 52 53 54 55	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4.5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5.1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5.2 TEST A26 - TEST FOR EOF STATUS BIT SETTING.
29 40 41 42 42 44 45 46 47 48 49 50 51 52 53 51 55 55 56	, , , , , , , , , , , , , , , , , , , ,	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4.5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5.1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5.2 TEST A26 - TEST FOR EOF STATUS BIT
19 40 41 42 42 44 45 46 47 48 9 50 51 52 53 45 55 57	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3.1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4.4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4.5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5.1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5.2 TEST A26 - TEST FOR EOF STATUS BIT SETTING.
29 40 41 42 42 44 45 46 47 48 49 50 51 52 53 51 55 55 56	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3 1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4 4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4 5 TEST A22 - TEST WRITE ODD FARITY. 7.5 STATUS BIT TESTS 7.5 1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5 2 TEST A26 - TEST FOR EOF STATUS BIT SETTING. 7.5 4 TESTS A28, A30, A31, A32- TEST STATUS BITS
79 48 41 42 42 44 45 46 47 48 49 50 51 52 53 53 55 55 56 57	, , , , , , , , , , , , , , , , , , , ,	 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3 1 TESTS A15 AND A16 - TEST RENIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4 4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.5 STATUS BIT TESTS 7.5 1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5 2 TEST A26 - TEST FOR EOF STATUS BIT SETTING. 7.5 4 TESTS A28, A30, A31, A32- TEST STATUS BITS AND MEMORY ADDRESS REGISTER DURING BACK
 19 48 42 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 		 7 2.0 TESTS A4 THRU A8 - TEST FOR UNIT SELECT BY LOADING AND TESTING THE MEMORY ADDRESS REGISTER. 7 2.4 TESTS A9 THRU A14 - TEST FOR SETTING AND RESETTING OF BUSY AND DONE BY START COMMAND. 7.3 FIRST TAPE MOTION 7.3 1 TESTS A15 AND A16 - TEST REWIND AND ERASE OPERATION AND STATUS. 7.4 FIRST DATA TRANSFER 7.4 4 TESTS A20 AND A21 - TEST FOR TOTAL DATA DATA WRITE WITH INTERRUPT. 7.4 5 TEST A22 - TEST WRITE ODD PARITY. 7.5 STATUS BIT TESTS 7.5 1 TEST A24 AND A25 - TEST FOR ILLEGAL COMMAND STATUS BIT SETTING. 7.5 2 TEST A26 - TEST FOR EOF STATUS BIT SETTING. 7.5 4 TESTS A28, A30, A31, A32- TEST STATUS BITS AND MEMORY ADDRESS REGISTER DURING BACK AND FORWARD SPACING.

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999	MT133					
91	, in 199		7. 6. 2	TESTS A	ASS AND A	136 - TEST WRITE AND READ
82	;			WITH DI	IFFERENT	WORD COUNTS.
83	j		7.6.4	TESTS P	AND THRU	A41 - TEST EOF WRITE AND
94			-	READ.		
•	;		7			ARD THET FOR EDGEINE
65 11	į		7. 6. 6			A53 - TEST FOR SPACING
86	į					ATING NOISE WITH 1/0
87	;			COMMENT)S.	
98	;	7.7	WRITE L	LOCK TEST	Г	
8 9	į		THIS TE	ST DETER	RMINES IF	F WRITE RING OUT
10						THIS TEST IS ONLY
11	j.					IRST PASS AND CAN BE DE-
12	,					WITCH REGISTER BIT 15.
13	1	7.8		TAPE TES		
14	j.		THIS TE	ST WRITE	65 4K BLC	icks from bot to eut. Dur-
15	,		ING THE	e tapp we	RITE ALL	ERROR STATUS CONDITIONS
16						E EOT SENSOR IS DETECTED
	2					TERMINATED AND THE TAPE IS
17	•					
18	j.					THE EDT SENSOR IS NOT DE-
19	<i>i</i> .		TECTED	THE WRIT	TE WILL (CONTINUE UNTIL THE TAPE
20	,		COMES (IFF THE S	SUPPLY RE	EL. THIS TEST CAN BE DE-
21	į					WITCH REGISTER BIT 14.
22		SOFT 5				
	2 Q.			ATALE OF		
23		S?WPD 4	-			
24		8.0	SWITCH	OPTIONS		
25	i					
26	<i>i</i>		DIFFERE	ENT SWITC	CH BITS A	ND THEIR INTERPRETATION
27	,		AT LGC	STICK "S	SWREG" AR	RE AS FOLLOWS:
28						
29	,		6.17	octroa	na kinner	THISSELTONICH
			BIT			INTERPRETATION
<u>D</u> Ø	, t				VALUE	
31	1		14(E)	00002	Ø	ENABLE WRITE TO EDT TEST
22	4				1	INHIBIT WRITE TO EOT TEST
33	,					
04	i		15(E)	9 9 001	8	ENABLE WRITE LOCK TEST
5					1	INHIBIT WRITE LOCK TEST
36					+	MANDIN MAINE LOOK (LS)
20 	<u>,</u>					
21	1		NOTE.			AND 15 CAN ONLY BE
38	<i>)</i>			ENABLES) CURING	THE FIRST PASS OF THE
39				DIAGNOS	STIC. IF	THE TESTS ARE TO BE PER-
40	,			FORMED	AFTER TH	E FIRST PASS, THEY CAN BE
41					Y ENTERE	
42		()PEPATI	ING PROCE			
43 -		9.1	PROGRAM			
	j	J. 1			M fail inte	
44	j.					ing the binary loader.
45	j.	9. 2	STARTIN	ng addres		
46	;		201	DIRECT	ENTRY TO) Octal Debugger(ODT)
47	;		500	START D	DIAGNOSTI	IC
48	;		501			WRITE LOCK TEST
49	;		502			WRITE TO EDT TEST
	,	a 7				/ WRITE TO EUT TEDT
50	1	9.3	FRUUKH	1 OPERATI	LUN	
51	j.					
52	j.					
53	<i>,</i>	THE DIM	HGNOSTIC:	PROGRAM	IS PROVI	DED TO FIND FAILURES THAT
54	;					IONS OF TAPE CONTROL. THE
55						Ye media is perfect and not
	j.					C HEVIN IS PERFEUI HNU NUI
56	3	THE CHU	JSE OF AN	IY EKKUR		
57	:					
58	i					M RELEASE TAPE M242. REFER
59	j.	to appe	ENDIX A F	OR INFOR	MATION C	IN PROGRAM LOADING. ONCE THE
60	j.					IG MESSAGE WILL DISPLAY:
	,	i isteransi fi			- OLLOWIN	NE CALLER AND AND AND AND AND A

9604 M	T133	
01	<i>i</i> .	
82	j.	- MT133D RELEASE 7.0
0 3	;	- TAPE COUPLER DIAGNOSTIC
84	;	- PRODUCT OF ZETACO
85	<i>;</i>	-
96	j	- PLEASE MOUNT A WRITE-ENHBLED ERROR FREE SCRATCH TAPE.
07	;	- ONLY THE DRIVE YOU ARE TESTING CAN BE ON-LINE.
ØS	;	PRESS ANY KEY TO CONTINUE.
89	;	
10		THE TAPE UNIT NUMBER IS REQUESTED AS FOLLOWS:
11		THE THE OWN WONDER TO READED TO TOECOND.
11)	- DRIVE UNIT #:
13	2	- DRIVE CANIX W.
	1	чан счанке бытер тыр жажара ар тыр нант чан найт та трат
14		YOU SHOULD ENTER THE NUMBER OF THE UNIT YOU WANT TO TEST.
15	j.	(0,1,2 OR 3)
16	2	
17	1	
18	i i	THE NEXT REQUEST IS:
19	j.	
20	i	- IF DRIVE SET FOR NRZ (800 SP1)) ENTER 0; OTHERWISE, ENTER 1.
21	j.	
22	1	YOU SHOULD ENTER 0 OR 1 IN ACCORDANCE WITH THE RECORDING MODE
23	,	
24	;	SET FOR THE TAPE ORIVE.
25	<u>;</u>	
26	i	YOU MUST NEXT RESPOND TO
27		
		- IF COUPLER IS A MT133 (6021 EMULATION), ENTER 0, FOR MT133
29	,	(6125 EMULATION) ENTER 1
20 20	,	
	,	WHEN THE ZETACO MITIZE COUPLER EMULATES DATA GENERAL'S 6125
22 	1	TAPE UNITY IT WILL WRITE RECORD LENGTHS UP TO 77777(OCTAL) HND
	1	ALWAYS REFURNS BITS 11 AND 12 = 9 ON DIA. DEPENDING ON WHICH
	.e	
34 ~=	,	EMULATION YOU ARE TESTING, ENTER 0 OR 1.
35	1	NEW WALLER TO EXTENDING CODE OF THE CODE OF
36	j	NEXT YOU WILL NEED TO ENTER THE DEVICE CODE OF THE TAPE DRIVE.
37	i.	
38	j.	- ENTER DEVICE CODE [22]]
39	i -	
40	,	- SET SWITCH REGISTER TO DESIRED VALUE, THEN PRESS RETURN TO
41	j.	
42	j.	CONTINUE
43	;	
44	<i>i</i> .	REFER TO THE SWITCH OPTIONS IN THE MILISTO PROGRAM LISTING IF
45	j.	YOU WISH TO SET THEM.
46	i	
47	i	IF YOU ARE RUNNING THE WRITE LOCK TEST, THE FOLLOWING MESSAGE
48	;	WILL BE DISPLAYED:
49	;	
50	j.	- REMOVE WRITE ENABLE RING. DON'T STOP THE PROGRAM.
51	į	
52		RESPOND BY DISMOUNTING THE TAPE, REMOVING THE WRITE RING, AND
53	;	REMOUNTING THE TAPE. THE PROGRAM WILL AUTOMATICALLY CONTINUE.
54	į	VERY SHORTLY. THE PROGRAM WILL DISPLAY:
55	i.	rente errentender ihne bisserent Mähle Mähle Hält.
56 56	;	- PUT WRITE RING BACK ON TAPE
57		FOR MALIE KING DROK ON THEE.
58	,	When the last test has been completed the program displays:
	2	MULA UNE ENSI (ESI ANS DEEN CUMPLETED IME MEUNAMI DISMEMYS)
	j.	- CYCLE
00	i	

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81 - FRSS 1 82 THE PROGRAM WILL CONTINUE INDEFINITELY. ALTHOUGH THE WRITE LOOK 84 FRO THEST WILL ONLY BE PERFORMED ON THE FIRST PROSS 85 10.1 PROGRAM EXCRUPTION 86 10.1 PROGRAM EXCRUPTION 87 10.1 PROGRAM EXCRUPTION 88 11.1 PROGRAM EXCRUPTION 89 10.1 PROSY MED ONE ERRORS 11 "SEED LINE NOT PESET BY TORST. PC = 20000" 12 "BUSY PLIP-FLOP NOT RESET BY TORST. PC = 20000" 13 "BUSY PLIP-FLOP NOT RESET BY TORST. PC = 20000" 14 "BUSY PLIP-FLOP NOT RESET BY TORST. PC = 20000" 15 "COME FLIP-FLOP NOT RESET BY TORST. PC = 20000" 16 "COME FLIP-FLOP NOT SET ERRORS. PC = 20000" 17 10.1.2 COMPALE ERROR. PC = 20000" 18 "COME FLIP-FLOP NOT SET ERRORS. PC = 20000" 19 "FERST CHARGETER THE GUT ERROR. PC = 20000" 19 "FERST CHARGETER THE GUT ERROR. PC = 20000" 19 "FERST CHARGETER THE GUT ERROR. PC = 20000" 10 TERROR THE GUT ERROR. PC = 20000" 10 TERROR. DEL	1995 MT130		
B2 THE PROGRAM HILL CONTINUE INDEFINITELY. ALTHOUGH THE MRITE LOCK B3 PHOL THE LOT TEST WILL DAY DE PERFORMED ON THE FIRST PRS. B4 PHOL MILL DAY DE PERFORMED ON THE FIRST PRS. B5 THE FOLLOWING IS A LIST OF PRELIMINERY CON- TRULER MO DERVE ERRORS B4 I B5 MM DONG ERRORS B5 THE FOLLOWING IS A LIST OF PRELIMINERY CON- TRULER MO DRIVE ERROR MESSMES. B6 B1 I B05 MM DONG ERRORS B1 B1 I DEVEND NOT RESET BY DORST. PC = X0000** B1 "SUBY FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DORE FLIP-FLOP NOT SET ERROR. PC = X0000** B1 "DERROR FLIPFECTHINE UNIT ERROR. PC = X0000** B1 "DERROF FERROR. PC = X0000**		,	- FASS 1
Bit THE PROGRAM HILL CONTINUE INDEFINITELY. ALTHOUGH THE WRITE LOCK Bit PROBRING TEXT WILL ONLY BE PERFORMED ON THE FIRST PROS. Bit Is 1 PROBRING TEXT WILL ONLY BE PERFORMED ON THE FIRST PROS. Bit Is 1 PROBRING TEXT WILL ONLY BE PERFORMED ON THE FIRST PROS. Bit Is 1 PROBLING TEXT WILL ONLY BERRING Bit Is 0.1 BOY RND CANCE ERRORS Bit Is 0.1 BOY RND CANCE ERRORS Bit Is 0.1 BOY RND CANCE ERRORS Bit Is 0.1 Is 0.95 ND CANCE ERRORS Bit Is 0.1 Is 0.05 ND CANCE ERRORS Is 0.00000*******************************			
AND THE LOT TEST WILL ONLY BE PERFORMED ON THE FIRST PRSS. AND THE EDUT TEST WILL ONLY BE PERFORMED ON THE FIRST PRSS. AND THE EDUCINES IS A LIST OF PRELIMINERY CON- TROLLER AND DRIVE ERROR MESSAGES. III III BUSY MUD DONE ERRORS IIII IIII PETOR NOT RESET BY TORST. PC = 300004" YELD LINE NOT RESET BY TORST. PC = 300004" YELD FLOP NOT RESET BY TORST. PC = 300004" YELD FLOP NOT RESET BY TORST. PC = 300004" YELD FLOP NOT RESET BY TORST. PC = 300004" YELD FLOP NOT RESET BY TORST. PC = 300004" YELD FLOP NOT SET ERROR. PC = 300004" YELD CLOCK BIT ON THE BUT FROM. PC = 300004" YELD CLOCK BIT ON THE BUT FROM. PC = 300004" YELD CLOCK BIT ON THE BUD ERROR. PC = 300004" YELD CLOCK BIT ON THESET BY TORST. PC = 300004" YELD FLOP NOT RESET BY TORST. PC = 300004" YELD CLOCE BORD. DIB COMMAD = 3000004. PC = 300004" YELD CLOCE BORD. DIB COMMAD = 3000004. PC = 300004" YELD CLOCE = 3000004. PC = 3000004" YELD CLOCE = 3000004. PC = 3000004. PC = 300004" <tr< td=""><td></td><td></td><td>THE PROGRAM WILL CONTINUE INDEFINITELY, ALTHOUGH THE WRITE LOCK</td></tr<>			THE PROGRAM WILL CONTINUE INDEFINITELY, ALTHOUGH THE WRITE LOCK
66 2.0. PROGRMM ERROR DESCRIPTION 67 19.1 PRELIMINERY TEST ERRORS 68 THE FOLLOWING IS A LIST OF PRELIMINERY CON- 7 TRUELER AND DEVE ERRORS 10 19.1 BUSY HAD DONE ERRORS 11 "SELD LINE NOT RESET EW LORST, PC = X0000" 12 "BUSY FLIP-FLOP NOT RESET EW LORST, PC = X0000" 13 "BUSY FLIP-FLOP NOT RESET EW LORST, PC = X0000" 14 "BUSY FLIP-FLOP NOT RESET EW LORST, PC = X0000" 15 "DONE FLIP-FLOP NOT RESET EW LORST, PC = X0000" 16 "DONE FLIP-FLOP NOT RESET EW LORST, PC = X0000" 17 18.12 CONTROLLER CONTROL FROME PC = X0000" 18 "SELMO CLOCK BIT ON TOLE LAND ERFORE, PC = X0000" 19 "FIRET CHREACTER TIME OUT ERFORE, PC = X0000" 20 "DATH REMOTER TIME OUT ERFORE, PC = X0000" 21 "MON INTERVET ERROR, PC = X0000" 22 "THERMOTER TIME OUT ERFORE, PC = X0000" 23 "MON INTERVET ERROR, PC = X0000" 24 "MON INTERVET ERROR, PC = X0000" 25 "MOD WERE SET STITUME ERRORS 26 "Y000D WERE SET STITUME ERRORS 27 "MOD WERE SET STITUME ERRORS 28 "Y00D W		;	
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12 **BUSY FLIP-FLOP NOT RESET ERROR. PC = X0000** 13 **BUSY FLIP-FLOP NOT RESET ERROR. PC = X0000** 14 **BUSY FLIP-FLOP NOT RESET ERROR. PC = X0000** 15 **DOME FLIP-FLOP NOT RESET ERROR. PC = X0000** 16 **DOME FLIP-FLOP NOT RESET ERROR. PC = X0000** 17 **ENA CHARACTER TIME GUT ERROR. PC = X0000** 18 **SEND CLOCK BIT ON TOO LONG ERROR. PC = X0000** 19 **FIRST CHARACTER TIME GUT ERROR. PC = X0000** 20 **FIRST CHARACTER TIME GUT ERROR. PC = X0000** 21 **NO INTERRUPT ERROR. PC = X0000** 22 **TILEEGH_INTERRUPT ERROR. PC = X0000** 23 **PC = X0000** 24 *NO INTERRUPT ERROR. DIB COMMIND = X0000**. PC = X0000** 25 **NA REGISTER NOT NESET BY IOST** 26 **GOOD WORD = X0000**. PC = X0000*** 27 **NA REGISTER NOT NESET BY IOST*** 28 **NO ERVICE CODE ERROR*********************************	10	;	10.1.1 BUSY AND DONE ERRORS
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14 ************************************	12	j.	"BUSY FLIP-FLOP NOT RESET ERROR, PC = XXXXX"
15 "DOME FLIP-FLOP NOT RESET ERROR. PC = X0000X" 16 "DOME FLIP-FLOP NOT SET ERROR. PC = X000X" 17 10.12.12 CONTROLLER DATA TRANSFER ERRORS 18 "SEND CLOCK BIT ON TOO LONG ERROR. PC = X000X" 19 "PIRST CHARACTER TIME GUT ERROR. PC = X000X" 20 "DATA TRANSFER TIME GUT ERROR. PC = X000X" 21 "NO INTERKUPT ERROR. PC = X000X" 22 "TILLEGAL INTERKUPT WITH MASK BIT SET. MASK = XX./ 23 PC = X000X" 24 "MID SELECT ERROR. DIE COMMAND = X0000X. PC = X000X" 25 "MAR REGISTER NOT RESET BY IORST" 26 "GODD WORD = X0000X. BPD WORD = X0000X. PC = X000X" 27 "MAR REGISTER SETTING ERROR" 28 "GODD WORD = X0000X. BPD WORD = X0000X. PC = X000X" 29 "INTH DEVICE CODE ERROR" 20 "UNE FLICE COLE ERROR" 20 "UNE PECTER ERRORS 21 18.2 SYSTEM ERRORS OCCURE DURING COMBINED COM- 23 "INTH DEVICE CODE ERROR" COMONOV. PC = X0000X" 24 THE FOLLOWING ERRORS COURTING ERRORS COURTING ERRORS 25 "INTH DEVICE CODE ERROR" COMONOV. PC = X0000X" COMONOV. PC = X0000X" <td>13</td> <td>;</td> <td>"BUSY FLIP-FLOP NOT RESET BY IORST, PC = XXXXX"</td>	13	;	"BUSY FLIP-FLOP NOT RESET BY IORST, PC = XXXXX"
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18 **SEND CLOCK BIT ON TOO LONG ERROR. PC = X000X** 19 **FIEST CHRRAFTER TIME OUT ERROR. PC = X000X** 28 **DATA TRANSFER TIME OUT ERROR. PC = X000X** 21 **NO INTERRUPT ERROR. PC = X000X** 22 **ILLBOHL INTERRUPT WITH MASK BIT SET. MASK = X0.7 23 . PC = X000X** 24 **INU SELECT ERROR. DIB COMMAND = X0000X, PC = X000X* 25 **MA REGISTER NOT RESET BY TORST** 26 **GOOD MORD = X0000X, BPD MORD = X0000X, PC = X000X** 27 **MA REGISTER NOT RESET BY TORST** 28 **GOOD MORD = X0000X, BPD MORD = X0000X, PC = X000X** 29 **INTA DEVICE CODE ERROR** 29 **INTA DEVICE CODE ERROR** 29 **INTA DEVICE CODE ERROR* 20 **DEVICE CODE ERROR* 21 **INTA PROJESTER KOND MAR REGISTER ERRORS 22 **THE FOLLOWING ERRORS OCCURE DURING COMBINED CON- 23 **THE FOLLOWING ERRORS 24 ***THE ERRORS 25 ***THE ERRORS 26 ***THE ERRORS 27 ****THE ERRORS 28 ************************************	16	,	"DONE FLIP-FLOP NOT SET ERROR, PC = XXXXX"
19 , "FIRST CHARACTER TIME OUT ERROR, PC = X000X" 28 , "DATA TRANSFER TIME OUT ERROR, PC = X000X" 21 ; "NO INTERRUPT REPORT PC = X000X" 22 ; "ILLEGAL INTERRUPT WITH MARK BIT SET, MARK = X007" 23 ; PC = X000X" 24 ; THU SELECT ERROR, DIE COMMAND = X000000, PC = X00000" 25 ; "MA REDISTER NOT MESET BY LORST" 26 ; "GOOD MARD = X000000, BFD MARD = X000000, PC = X00000" 25 ; "MA REDISTER NOT MESET BY LORST" 26 ; "GOOD MARD = X000000, BFD MARD = X000000, PC = X0000" 27 ; "MA REDISTER SETTING ERROR" 28 ; "GOOD MARD = X000000, BFD WARD = X000000, PC = X0000" 29 ; "INTA DEVICE CODE ERROR" 20 ; "DEVICE CODE = X0, UNIT DEVICE CODE = X0, PC = X0000" 21 ; INTA DEVICE CODE = K000" 22 ; THE POLLOWING ERRORS OCCURE DURING COMBINED CON- 23 ; THE POLLOWING ERRORS 24 ; INTA DEVICE CODE = X00000, PC = X00000, ' 34 ; IO 2.1 DATA TRANSFER AND MA REGISTER ERRORS 35 ; "MA REGISTER COUNTING ERRORS 36 ; "DODE MARDE = X00000, PC = X00000, ' 37 "ODED MARDE = X00000, PC = X00000, '	17	j.	10.1.2 CONTROLLER DATA TRANSFER ERRORS
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23 , PC = X000X** 24 , 'NTU SELECT ERROR, DIB COMMAND = X0000X, PC = X000X* 25 , 'MA REGISTER NOT RESET BY IORST** 26 , '000D WORD = X0000X, BRD WORD = X0000X, PC = X000X* 27 , 'MA REGISTER SETTING ERROR* 28 , '000D WORD = X0000X, BRD WORD = X0000X, PC = X000X* 29 , 'INTA DEVICE CODE ERROR* 29 , 'INTA DEVICE CODE = KX, UNIT DEVICE CODE = XX, PC = X000X* 29 , 'INTA DEVICE CODE ERROR* 20 , 'DEVICE CODE = KX, UNIT DEVICE CODE = XX, PC = X000X* 21 10.2 SYSTEM ERRORS 22 , THE FOLLDWING ERRORS OCCURE DURING COMBINED CON- 23 , THE FOLLDWING ERROR* 24 , 0.2.1 DATA TRANSPER NM MA REGISTER ERRORS 25 , 'MA REGISTER COUNTING ERROR* 26 , 'O00D WALUE = X0000X, BAD WORD = X0000X, PC = X000X* 27 , 'DATA COMPARE ERROR* 28 , 'MA REGISTER COUNTING ERROR* 29 , 'MA REGISTER COUNTING ERROR* 29 , 'DATA COMPARE ERROR* 20 , 'DATA COMPARE ERROR* 21 , 'DATA COMPARE ERROR* 22 , 'DATA LATE SERORS </td <td>21</td> <td>1</td> <td>"NO INTERRUPT ERROR, PC = XXXXX"</td>	21	1	"NO INTERRUPT ERROR, PC = XXXXX"
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26 "GOOD WORD = X000XX, BHD WORD = X000XX, PC = X000X" 27 "MA REGISTER SETTING ERROR" 28 "GOOD WORD = X000XX, BAD WORD = X000XX, PC = X000X" 29 "INTA DEVICE CODE ERROR" 29 "INTA DEVICE CODE ERROR" 20 "DEVICE CODE = X0, UNIT DEVICE CODE = X0, PC = X000X" 21 10.2 SYSTEM ERRORS 22 "HE FOLLOWING ERRORS OCCURE DURING COMBINED CON- 23 THE FOLLOWING ERRORS OCCURE DURING COMBINED CON- 24 10.2.1 DATA TRANSPER AND MA REGISTER ERRORS 25 "MA REGISTER COUNTING ERROR" 26 "GOOD WALUE = X0000X, BAD VALUE = X0000X, PC = X000X," 26 "GOOD WALUE = X0000X, BAD VALUE = X0000X, PC = X000X," 26 "GOOD WALUE = X0000X, BAD WALUE = X0000X, / 27 "DATA COMPARE ERROR" 28 "GOOD WALUE = X0000X, BAD WALUE = X0000X, / 29 WEMORY ADDRES = X0000X, PC = X0000X, / 29 MEMORY ADDRES = X0000X, ACTUAL STATUS = X0000X, / 29 MEMORY ADDRES = X0000X, ACTUAL STATUS = X0000X, / 29 MEMORY ADDRES = X0000X, ACTUAL STATUS = X0000X, / 29 REWERTED STATUS = X0000X, ACTUAL STATUS = X0000X, / 29 REMO	24	4	"MTU SELECT ERROR, DIB COMMAND = XXXXXX, PC = XXXXX"
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28 , "GOOD WORD = X0000000 PC = X00000000000000000000000000000000000	26		"GOOD WORD = XXXXXXX, BAD WORD = XXXXXXX, PC = XXXXXX"
29 , "INTA DEVICE CODE ERROR" 28 "DEVICE CODE = XX, UNIT DEVICE CODE = XX, PC = XXXXX" 31 ; 18 2 SYSTEM ERRORS 32 ; THE FOLLOWING ERRORS OCCURE DURING COMBINED CON- 33 ; 18 2 SYSTEM ERRORS OCCURE DURING COMBINED CON- 34 ; 18 2.1 ADTA TRANSFER AND MA REGISTER ERRORS 35 ; 18 2.1 ADTA TRANSFER AND MA REGISTER ERRORS 36 ; 18 2.1 ADTA TRANSFER AND MA REGISTER ERRORS 37 ; 19 2.1 ADTA TRANSFER AND MA REGISTER ERRORS 36 ; 18 2.2 STATUS HORD 37 ; "OATA COMPARE ERROR" ; 2000000000000000000000000000000000000	27	7	"MA REGISTER SETTING ERROR"
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18 ; TINUE	18		;		TINUE
19 ; <u>iz</u> run time	19		; 13.	RUN TIM	1E
20) THE PROGRAM RUN TIME DEPENDS ON THE LENGTH OF THE TAPE	20		;	THE PRO	GRAM RUN TIME DEPENDS ON THE LENGTH OF THE TAPE
21 IT IS RECOMMENDED THAT A 600 FOOT REEL BE USED TO SPEED	21		,	IT IS R	ECONMENDED THAT A 600 FOOT REEL BE USED TO SPEED
22 UP THE WRITE TO EOT SENSOR TEST.			j.	UP TH	

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65 DECRIPTION: UNIVERSAL MAGNETIC TAPE RELIABILITY 66 PRODUCT OF ZETACO 1984 67 PRODUCT OF ZETACO 1984 68 PRODUCT OF ZETACO 1984 68 NUMTR 69 NUMTR 69 NUMTR 61 NUMTR 62 NEV 64 NUMER 65 NUMTR 66 NUMER 67 NUMER 68 NUMER 69 NUMER 60 NUMER 60			i							
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12 060001 X=1 13 000001 NOMRC X 14 /1 PROGRAM NAME: UMTR SR 15 .	69									
12 000001 X=1 15 000001 X0MPC X 14 X1 PROGRAM NAME: UMTR.SR 15 X1 PROGRAM NAME: UMTR.SR 16 X2 REVISION HISTORY: X1 17 X1 REV 00.0 06/07/82 28 X1 REV 01.0 08/07/82 28 X1 REV 01.0 08/07/82 29 X1 REV 01.0 08/07/82 20 X1 REV 01.0 08/07/82 21 X1 NOVEL NUMBER NAMES 22 X1 10.0 0.0 REV 23 X1 Y1.0 Y1.0 NAMES 24 X2.0 10.0 Y1.0 PROGRAM SA 25 X1 NOVA OR ECLIPSE FAMILY CRU'S 26 X2	10									
13 000001 NORPC % 14 1. PROGRAM NAME: UNTR.SR 15 . . PEVISION HISTORY: 16 .2. PEVISION HISTORY: 17 . 18 . REV. DATE 19 . PEV 00.0 .06/07/82 20 . REV. DATE 19 . PEV 00.0 .06/07/82 20 . REV. DATE . 11 . . TO HANDLE CSI MODEL 130R (6125 EMULATION) 22 23 24 25 26 25 26 27 										
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16 12 REVISION HISTORY: 17	14) 1. PROGRAM NAME: UNTR. SR							
17 ; REV DATE 19 PEV 00.0 :06/07/32 20 .REV 01.0 :08/83 BY P.A.N. FOR CSI 21 . .REV 01.0 :08/83 BY P.A.N. FOR CSI 22 . .REV 01.0 :08/83 BY P.A.N. FOR CSI 23 .	15									
13 ; REV DATE 19 ; REV 00,0 ;06/07/82 20 ; REV 01,0 ;06/07/82 20 ; REV 01,0 ;06/07/82 20 ; REV 01,0 ;06/07/82 21 ; TO HANDLE CSI MODEL 1304 (6125 EMULATION) 22 ; ASK FOR MODEL NUMBER. 23 ; IF 1308 BIT 0 OF DOB/DIB MONT'T BE MASKED. 24 ; 9/03 - FOR 1308 ALLOW FOR BIGGER RECORD. 25 ; (SK WORDS) 26 REV 02,0 ;03/22/04 27 ; 120 TO 133 AND PROPER DEVICE CODE CHANGE 28 ; ROUTINE 29 ; into YA OR ECLIPSE PAMILY CPU'S 31 ; 12 32 ; MACHINE REQURPMENTS 33 ; 12 34 ; EETHCO MAG TARE COUPLER (CONTROLLER) BORD 25 ; 3.5 33 ; ; 34 TELETYPE OR CRT AND CONTROLLER <	16		2. REVISION HISTORY:							
19 2 PEV 00.0 :06/07/82 20 : REY 01.0 :08/83 BY P.A.N. FOR CSI 21 : TO HENDLE CSI MODEL 130A (6125 EMULATION) 22 :	17									
28 : .REV 91, 0 ; 08, 93, BY P. A. N. FOR CSI 21 : TO HANDLE CSI MODEL 130A (6125 EMULATION) 22 :	18		; REV. DATE							
28 : .REV 91, 0 ; 08/93 BY P. A. N. FOR CSI 21 : TO HANDLE CSI MODEL 130A (6125 EMULATION) 22 :	19)							
21 i TO HANDLE CSI MODEL 130A (6125 EMULATION) 22 i ASK FOR MODEL NUMBER 23 IF 130A BIT 0 OF DOB/DIB WONT/T BE MASKED. 24 9/83 - FOR 130A ALLOW FOR BIGGER RECORD. 25 (6K WORDS) 26 .REV 02.0 i03/22/84 27 100 T0 130 AND PROPER DEVICE CODE CHANGE 28 ROUTINE 29	20									
22 ASK FOR MODEL NUMBER. 23 IF 130A BIT 0 OF DOB/DIB WONT/T BE MASKED. 24 9/83 - FOR 130A ALLOW FOR BIGGER RECORD. 25 (SK WORDS) 26 .REV 02.0 / 03/22/84 27 120 TO 133 AND PROPER DEVICE CODE CHANGE 28 ROUTINE 29 20 .3. 21 22 23 24 25 26 27 28 29 20 21 22 23 24 25 26 27 28 29 20 21 22 33 34 IELETYPE OR COUPLER (CONTROLLER) BOARD										
23 IF 130A BIT 0 OF DOB/DIB WONT'T BE MASKED. 24 9/93 - FOR 130A ALLOW FOR BIGGER RECORD. 25 (8K WORDS) 26 .REV 02.0 (03/22/04) 27 120 T0 133 AND PROPER DEVICE CODE CHANGE 28 ROUTINE 29 . 20 .1 23										
24 9/83 - FOR 130A ALLOW FOR BIGGER RECORD. 25 (8K WORDS) 26 .REV 02.0 03/22/84 27 130 TO 133 AND PROPER DEVICE CODE CHANGE 28 ROUTINE 29										
25 ; (SK WORDS) 26 .REV 02.0 :03/22/34 27 ; 100 TO 133 AND PROPER DEVICE CODE CHANGE 28 ; ROUTINE 29 ;										
26 .REV 92.0 103/22/84 27 .100 TO 133 AND PROPER DEVICE CODE CHANGE 28 .ROUTINE 29 . 30 /3. 31 . 32 .1 33 .1 34 .1 35 .1 36 .3. 37 .2 38 .3. 39 .3. 30 .3. 31 32 .1 33 .2.2 41 .3.3 25 .3.4 36 .3.5 37 .4. 38										
27 130 TO 133 AND PROPER DEVICE CODE CHANGE 28 ROUTINE 29 ROUTINE 30 1 31 Image: State S										
28 ROUTINE. 29 . 30 .3. 31 .1 32 .1 33 .2. 34 .3. 35 .2. 36 .3. 37 .2. 38 .2. 39 .3. 24 .3. 30 .2. 31 .2. 32 .3. 33 .2. 41 .3. 51 .4. 70 .4. 71 .4. 72 .4. 73 .7. 74 .7. 75 .7. 76 .7. 77 .4. 78 79 .7. 71 .7. 72 .7. 73 .7. 74 .7. 75 .7. 76 .7. 77 .7. 78 <td< td=""><td></td><td></td><td></td></td<>										
29 , 30 , 2. 31 , 32 , 1. NOVALOR ECLIPSE FAMILY CPU15 33 , 2. MINIMUM OF 16K MEMORY 34 , 3. .2. 35 , 3. .2. 36 , 3. .2. 37 , 4. TELETYPE OR CRT AND CONTROLLER BOARD 36 , 3. .4. 36 , 3. THE TREDUIREMENTS 38 .										
30 32 MACHINE REQURPMENTS 31 . .1 NOVA OR ECLIPSE FAMILY CPUTS 32 .1 NOVA OR ECLIPSE FAMILY CPUTS 33 .12 MINIMUM OF 16K MEMORY 34 .3 .2 35 .3 .2 36 .3 .3 37 .4 TELETYPE OR CRT AND CONTROLLER) BOARD 36 .3 .5 37 .4 TEST REQUIREMENTS 38 . 39 . . . 41 .5 . . 43 . . . 44 			ROUTINE.							
31 , 32 , 1 NOVA OR ECLIPSE FAMILY CPU'S 33 , 1,2 MINIMUM OF 16K MEMORY 34 , 3,3 ZETACO MAG TAPE COUPLER (CONTROLLER) BOARD 35 , 3,4 TELETYPE OR CRT AND CONTROLLER BOARD 36 , 3,5 TAPE DRIVE (S) 1 37 ,4 TEST REQUIREMENTS 1 38 . . . 40 , . . 41 ,5 . . 42 . . . 43 . . . 44 . . . 43 . . . 44 . . . 45 . . . 46 . . .										
32 3.1 NOVA OR ECLIPSE FAMILY CPU'S 33 3.2 MINIMUM OF 16K MEMORY 34 3.3 2ETACO MAG TAPE COUPLER (CONTROLLER) BOARD 35 3.4 TELETYPE OR CRT AND CONTROLLER 36 3.5 TAPE DRIVE (S) 37 4. TEST REQUIREMENTS 38 . . 39 . N/A 40 . . 41 .5. SUMMARY 42 . . 43 . THE TAPE RELIABILITY PROGRAM IS A MAINTENANCE 44 . PROGRAM INTENDED TO VERIFY THE MAGNETIC TAPE 45 . . 46 .			(3. MACHINE REQUREMENTS							
33 , 3.2 MINIMUM OF 16K MEMORY 34 , 3.3 2ETACO MAG TAPE COUPLER (CONTROLLER) BOARD 35 , 3.4 TELETYPE OR ORT AND CONTROLLER 36 , 3.5 TAPE DRIVE (S) 37 ,4 TEST REQUIREMENTS 38 , 39 , 40 , 41 ,5 50 SUMMARY 42 , 43 , 44 , 44 , 45 , 46 ,										
34 3.3 2ETACO MAG TAPE COUPLER (CONTROLLER) BOARD 35 3.4 TELETYPE OR CRT AND CONTROLLER 36 3.5 TAPE DRIVE (S) 37 -4. TEST REQUIREMENTS 38 - 39 - 40 - 41 -S. 51 SUMMARY 42 - 43 - 44 - 45 - 46 -										
35 3.4 TELETYPE OR CRT AND CONTROLLER 36 3.5 TAPE DRIVE (S) 37 -4. TEST REQUIREMENTS 38 - 39 - 40 - 41 - 43 - 43 - 44 - 45 - 46 -	22		7 3.2 MINIMUM OF 16K MEMORY							
36) 3.5 TAPE DRIVE (S) 37 /4. TEST REQUIREMENTS 38 . 39 . 40 . 41 .5. 42 . 43 . 44 . 45 . 46 .	24									
37 74. TEST_REQUIREMENTS 38 7 39 7 40 7 41 75. 42 7 43 7 44 7 45 7 46 7	35		3 4 TELETYPE OR CRT AND CONTROLLER							
38 78 78 39 N/A 40 7 41 5 42 7 43 7 44 7 45 7 46 7	36		; 3.5 TAPE DRIVE (S)							
36 , 39 , 40 , 41 ,5. 42 , 43 , 44 , 45 , 46 ,										
39 N/A 40 . 41 .5. SUMMARY 42 . 43 . THE TAPE RELIABILITY PROGRAM IS A MAINTENANCE 44 . PROGRAM INTENDED TO VERIFY THE MAGNETIC TAPE 45 . SUB-SYTEM OPERATION. 46 . .	38		1							
40 , 41 ,5. SUMMARY 42 , 43 , THE TAPE RELIABILITY PROGRAM IS A MAINTENANCE 44 , PROGRAM INTENDED TO VERIFY THE MAGNETIC TAPE 45 , SUB-SYTEM OPERATION. 46 ,			. N/A							
41 5. SUMMARY 42 5 43 5 44 5 45 5 46 5										
42) 43) THE TAPE RELIABILITY PROGRAM IS A MAINTENANCE 44) PROGRAM INTENDED TO VERIFY THE MAGNETIC TAPE 45) SUB-SYTEM OPERATION 46 ;			•							
43 ; THE TAPE RELIABILITY PROGRAM IS A MAINTENANCE 44 ; PROGRAM INTENDED TO VERIFY THE MAGNETIC TAPE 45 ; SUB-SYTEM OPERATION 46 ;										
44 ; PROGRAM INTENDED TO VERIFY THE MAGNETIC TAPE 45 ; SUB-SYTEM OPERATION. 46 ;										
45 ; SUB-SYTEM OPERATION. 46 ;										
46 ;										
47 JD. KESIKIUHUNS										
10										
49 ONLY THOSE TAPE DRIVES TO BE TESTED ARE TO										
50) BE ONLINE. ALL ONLINE DRIVES MUST BE WRITE ENABLED.	56		DE UNLINE. HLL UNLINE DRIVES MUST BE WRITE ENABLED.							

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1 998 2 UMTR		M. D. T. T. M. T. M.
61.	7. Progra	M DESCRIPTION/THEORY OF OPERATION
<i>8</i> 2	,	
93	; 7.1	RANDOM RELIABILITY (SA 500)
84		
)	THE DOWNAM OF TOTAL THE THAT WITTER DOWNAM
95	j -	THE RANDOM RELIABILITY TEST WRITES RANDOM
96	;	LENGTH FILES. EACH FILE CONSISTS OF FROM
97	i	1 TO 7 RANDOM LENGTH, RANDOM PATTERN REC-
	,	ORDS. THE RANDOM FILES ARE WRITTEN AND
98	;	
0 9	;	Read the full length of the media. If
10	;	MORE THAN ONE(1) TAPE DRIVE IS AVAILABLE;
11	:	A UNIQUE RANDOM FILE WILL BE WRITTEN ON EACH
	,	UNIT SEQUENTIALILY. WHEN EACH UNIT'S EOT
12	1	
13	i -	SENSOR IS DETECTED, ITS ACCUMULATED
14	j.	HISTORY IS PRINTED AND THE UNIT IS COM-
15	i	MANDED TO REWIND. ALL WRITE ENABLED,
16	1	READY TAPE UNITS WILL BE TESTED. A UNIT
17	;	CAN BE MADE READY AND WILL BE TESTED AFTER
18	;	THE TEST HAS BEEN INITIATED. IF A UNIT
19	:	BECOMES NOT READY DURING THE TEST, ITS
	,	
20	j.	HISTORY WILL BE PRINTED AND THE UNIT
21	į	WILL BE REMOVED FROM THE AVAILABLE UNITS
22	;	LIST. THE TEST WILL CONTINUE UNTIL STOPPED
23	;	BY THE OPERATOR.
24	<i>i</i>	
25) 7.2	INTERCHANGE TEST/ WRITE/READ (SA 501)
26	j.	
27	;	THE INTERCHANGE TEST IS USED TO VERIFY THE
28		INTERCHANGABLITY OF THE TAPE UNITS. THIS
	1	
29	i i	TEST GENERATES 200/ 2000 WORD RECORDS OF
38	1	SKEW PATTERNS FOLLOWED SY 200, 2000 WORD
31	į	RECORDS OF RANDOM DATA. AFTER ALL THE
32		
	j	ONLINE, WRITE ENABLED UNITS HAVE BEEN
33	j.	WRITTEN, THEY ARE ALL READ TO INSURE
34	j.	PROPER WRITTING. THE OPERATOR THEN INTER-
35	i.	CHANGES THE TAPES AND PERFORMS ANOTHER
36		READ VERIFICATION. THIS PROCEDURE IS CON-
	1	
	j.	TINUED UNTIL EACH TAPE HAS BEEN READ BY
38	÷.	ALL THE UNITS. AFTER EACH READ, A SUMMARY
39		OF THE ACCUMULATED STATISTICS FOR EACH
40		
	4	UNIT IS PRINTED. AFTER ALL THE UNITS HAVE
41)	BEEN READ, A TEST COMPLETE MESSAGE IS
42	j.	PRINTED. IF THE OPERATOR WISHES TO CON-
43 -	;	TINUE THE TEST, TYPING A 'P' CHARACTER
44		WILL REPEAT THE ENTIRE TEST.
	,	WILL NEFERT THE ENTINE TEST.
45	i	
46	; 7.3	Interchange, read only (SA 502)
47	;	
43	:	THE READ ONLY INTERCHANGE TEST PROVIDES
	,	
49	j.	A MEANS OF TESTING TAPE UNITS WITH PRE-
50	;	Recorded Tapes. The Tapes must be recorded
51	i	IN THE FORMAT DESCRIBIED BY SECTION 7. 2.
52		THE READ OPERATION IS IDENTICAL TO
	1	
53	j.	SECTION 7.2.
54	7.4	COMMEND STRING INTERPRETER (SA 504)
55	,	
		ТИЕ СОММАНИ, СТРИМС: ИНТЕРОРЕТСЯ ВОЛНИМСС
	1	THE COMMAND STRING INTERPRETER PROVIDES
57)	A TROUBLE SHOOTING AID TO ISOLATE A
58	j.	FAULT. THE OPERATOR CAN SELECT ALL POS-
59	i	IBLE OPERATING MODES BY RESPONDING TO
14 M		THE OFENHING HOVED OF REPROVENTING IN
60		CONSOLE REQUESTS. ALL NUMBERS MUST BE

0 00 3 umtr			
91	j.	ENTERED	IN OCTAL.
82)		
9 3	;	7. 4. 1	UNIT
84	;		
85	;		UNIT NUMBER AND/OR CARRIAGE
96	;		RETURN TO USE PREVIOUS COMMAND
87	, ;		STRING. 1F ONLY A CARRIAGE
08 08			RETURN IS TYPED, NO OTHER RE-
	;		QUESTS WILL BE MADE AND THE LAST
89 10)		
10	<i>i</i>		ENTERED COMMANNO STRING WILL BE
11	<i>i</i>		RUN. THE ENTRY IS IN THE RANGE
1.2	1		of 0 to 7. The default unit num-
13	;		BER IS 0.
14	i		
15	<i>j</i>	7.4.2	NC (WORD COUNT)
16	j.		
17			type an octal number to select
			THE DATA BLOCK SIZE AND/OR A
18			
19	į		CARRIAGE RETURN TO USE THE PRE-
20	j.		VIOUS ENTRY. THE DEFAULT VALUE
21	i i		15 THE MAXIMUM BLOCK SIZE. THE
22			ENTRY IS IN THE RANGE OF 2 TO
23	3		THE MAXIMUM BLOCK SIZE.
24	,		
25	i	7.4.3	0A1A
26	1		
27	,		SELECT ONE OF THE FOLLOWING DATA
28			PATTERNS AND/OR A CARRIAGE RETURN
29			TO USE THE PREVIOUS ENTRY. THE
 30			DEFAULT PATTERN IS RANDOM
	2		VERDULI INTITEMU IS KANUUN.
21	ŗ		Portain, T. Cain, Cai
32	j.		RAND - RANDOM
33 34	i i		ALL1 - ALL ONE'S
34	i i		ALLO - ALL ZERO'S
<u>75</u>	i		ALTO - ALTERNATING ZERO/ONE (000377)
36	1		ALT1 - ALTERNATING ONE/ZERO (177400)
37			FLT0 - FLOATING ZERO
33	÷		FLT1 - FLOATING ONE
39	;		SKEW - SKEW
40			VARIABLE - THE VARIABLE PATTERN IS
41			
-			ENTERED BY THE OPERATOR
42 47	,		AS OCTAL CHARACTER STRINGS.
43	j.		UP TO 8, 16 BIT OCTAL NUMBERS
44	;		Can be entered. The data
45	;		BUFFER 15 BUILT BY REPEATING
46).		THE ENTERED CHARACTER STRINGS.
47	j	7, 4, 4	PARITY
48	;		
49)		TYPE YEVENY OR YODDY AND/OR
50	i i		CARRIAGE RETURN TO SELECT THE
51	,		PARITY OR USE THE PREVIOUS
52			ENTRY. THE DEFAULT PARITY IS
53			
	,		ODD.
54	i i		
55)	7, 4, 5	COMMAND STRING
56	1		
57	1		THE OPERATOR CAN SELECT THE SUB-
58	j.		SYSTEM OPERATION BY TYPING THE
59	j.		Desired commands and/or carriage
60	;		RETURN. ALL N(NUMBER) ENTRIES MUST

r .

0004			
0 00 4 81	UMTR		BE IN OCTAL. IF THE COMMAND STRING
82	, ,		EXCEEDS THE LINE LENGTH, TYPE A
03	;		LINEFEED TO CONTINUE ON THE NEXT
84	;		LINE. THE FOLLOWING IS A LIST OF
85	j.		AVAILABLE SUB-SYSTEM COMMANDS.
06	j.		
0 7	;		RD N READ N RECORDS
<i>8</i> 8	<i>j</i>		RW REWIND
8 9	i		SBIN SPACE BACKIN RECORDS
10	j.		SFIN SPACE FORWARD N RECORDS
11	1		WT N WRITE N RECORDS
12	1		WE WRITE END OF FILE MARK
13 14	j.		ER ERASE 3" OF TAPE
14 15	j.		Re Read end of file mark Loop Loop Back to first command
10 16	,		* LOOP TO HERE
10	,		* 200F 10 MERE 200F * 200F 10 *
18	,		
10 19	,		SAMPLE COMMAND STRINGS
20	;		and a later structure entry of 115 & Trailer
20	,		RW WT 10 58 10 RD 10 LOOP
22	,		
23	į		THE ABOVE COMMAND STRING WILL REWIND,
24	,		WRITE 3 RECORDS, SPACE BACK 3 RECORDS,
25	i		AND READ 8 RECORDS. THIS TEST WILL
26	į		CONTINUE UNTIL STOPPED BY THE OPERATOR.
27	1		
28	;		RW, WT 10, WE * RW, SF, 10, SB, 10, RD, 10, RE,
29 50	i		L00P *
30 34	į		ТИЕ ОЛОНИЕ СОММОНИЕ СТРАТИС ИЛИ С ОПИТИИ
31 32)		THE ABOVE COMMAND STRING WILL REWIND,
32 33	i i		WRITE 3 RECORDS, WRITE AN EOF MARK, AND THEN LOOP ON REWIND, SPACE FORWARD
34 34			8 RECORDS, SPACE BACK 8 RECORDS, READ
35			8 RECORDS AND READ FOR MARK
36	,	NOTE:	EITHER A SPACE OR COMMA CAN BE
37	i i		USED AS AN ARQUEMENT DELIMITER
38	j.		IF AN INCORRECT CHARACTER OR
39	<i>i</i>		Characters are typed, type a rub-
40	į		OUT CHARACTER TO DELETE THE PRE-
41	j.		VIOUSLY TYPED CHARACTER. THE DELE-
42	j		TED CHARACTER WILL BE PRINTED.
43	;		
44 45	;		HE CONTINUE STRING IS BEING EXECUTED
45 46	;		'R' CHARACTER TO CAUSE THE PROGRAM
46 47	i i		RN TO THE UNIT PROMPT. THE ESCAPE L CRUSE THE PROGRAM TO RETURN TO THE
48	i i		STRING ENTRY POINT
49	, j	CONTINUE	SIRING ENIRT FUINT.
50	7.5	HISTORY	RECOVERY (SA 504)
51	,		
52	;	IF THE	PROGRAM HAS STOPPED DURING AN OPERATION
53	j	THE ACC	UMULATED ERROR AND PASS HISTORY CAN BE
54	;	RECOVER	ED BY THIS PROGRAM. THIS PROGRAM MUST
55	į	BE RUN I	BEFORE ANY OTHER PROGRAM IS RESTARTED.
56	j.		
57	j.		IEVE THE ACCUMULATED ERROR AND PASS
58	j.		WHILE THE RELIABILITY TEST IS RUNNING
59 62	;		SPACE. THIS WILL CRUSE THE ACCUM-
60	;	ULATED	HISTORIES OF ALL TESTED UNITS TO BE

6665	UMTR									
81		j –		PRINTED						
8 2		;8. OPE	RHTING	IODES/SW1		INGS				
03		<i>i</i>		SWITCH						
84		<i>i</i>		BIT			INTERPRET	TION		
05 26		,			VALUE	VALUE				
96 07		;		2	00000	a	ENABLE PR	тит ом се	ALCOL C	
07 08		;		2	28868	0 1	INHIBIT PR			
90 89		;				T		CINE ON C	UNDULE	
10		;		5	A2AAA	Ø	INHIBIT L		R	
11		;		Ŭ	02000	1	ENABLE LI			
12		, ;				-			•	
13		,		7	00400	0	ENABLE PRI	INT PARIT	Y ERRORS	
14		j.				1	INHIBIT PP	RINT PARI	TY ERROR	S
15			S?WPD	8						
16		į		"ESC"	THIS CO	immihnd GI	VEN WHILE P	RUNNING 1	HE	
17		;			ENTERED) commend	STRING WI	L CAUSE	THE	
18		i -			PROGRAM	1 TO REST	art at the	COMMEND	STRING	
19		j.			ENTER P	ROMPT.				
20)								
21) 9.	OPERAT	ing proce	DURES/OP	'ERATOR I	NPUT			
22		ē	.	55555 AM	1.000					
23		į	9.1	PROGRAM	LUHU					
24 AF		2		1000 711	r: process	M 561 1057	NE THE STAR		'n	
25 26					האנטאה ב	NT DT US1	NG THE BING	NKT LUHUE	.R.	
26 27		;	9.2	CTODTIN	g addres	cec				
28		, ,		2000 C 209	u neoneo	·-••-				
29		; ;		SA	PROGRAM	FUNCTIO	N			
38					r romana a s		17			
31		;		500	start r	ELIABILI	TY TEST			
32		,		561	START 1	NTERCHAN	GE TEST, W	RITE/READ	I	
33				502	START I	NTERCHAN	GE TEST, RE	EAD ONLY		
34		1		503	START C	ommanið s	TRING INTER	RETER		
35		j.		504	DIRECT	ENTRY FO	r error loo	G RECOVER	9	
36		j.								
37		2	9.3	PROGRAM	OPERATI	ON				
38 Do		3			THITTO	1.750.77.7.044				
39		1		9. s. 1	INITIAL	.12H11UN				
49 41		у				LOUING M	ESSAGE IS R	DINTER C	CHIECTIN	2
42		, ,					1HE SOFT SM			1
43		;				1110 01	111 C 201 1 24	AL CAL NEC		
44		;	"SET SI	ITCH REG	ISTER TO	DESIRED	VALUE, THE	EN PRESS	RETURN TO) CONTINUE"
45		;	M							
46		j		23			8 9 10			
47		j.	1 1	00	Ü Ü	00	0 0 0	0 0	00	0
48		i								
49 50		;	Ø							
50 51		j.			HOLICH					
51 50		1					CH REGISTER			
52 52		j.					ECTION 8.3, DN THE ECH			
53 54)					RN. THE FOL	LUWING P	contraco	
04 55		1			WILL BE	PRINTED				
00 56) :				COL TIME	CLOCK IS N	את מסבכב	אד זא	
50 57		, ,					FOLLOWING			
58		,			BE PRIN		COLONING	, na jugi Pala	~ 1 1	
59		;								
60		;	"TTO B	iud Rate	= ?*					

3996	UMTR	
91		i
82		RESPOND TO THE REQUEST BY TYPING THE
0 3		; CORRECT CONSOLE DEVICE BAUD RATE FOR
64		; I/O TIMING CALIBRATION. IF THE RESPONSE
0 5		; IS 110, THE FOLLOWING REQUEST MESSAGE
86 07		WILL BE PRINTED.
07 00		<pre>/ "10 OR 11# BITS/CHAR = ?"</pre>
98 99		; Respond to the request by typing 10 or
05 10		
10		; <u>11</u> .
12		
13		RELIABILITY TEST"
14		"SPECIFY THE MODEL NUMBER OF THE ZETACO COUPLER(S) BEING TESTED. "
15		, "(110=1, 120=2, 133 (6021)=3, 133 (6125)=4);"
16		i
17		YOU SHOULD RESPOND TO THIS QUESTION BY
18		ENTERING THE NUMBER ASSOCIATED WITH THE
19		ZETACO MODEL NUMBER FOR THE COUPLER IN THE
20		TAPE UNIT(S) BEING TESTED. FOR EXAMPLE,
21		IF YOU ARE RUNNING WITH ZETACO COUPLER 133
22 23		; (6021) ENTER "3".
23 24		
25		
26		* ************************************
27		
28		ANSWER THE REQUEST BY TYPING OCTAL DEVICE CODE.
29		IF ANY DEVICE CODE OTHER THEN 20 THRU 76 IS
38		SELECTED, THE DEVICE CODE ENTRY PROMPT
31		WILL BE PRINTED AGAIN.
32		i i i i i i i i i i i i i i i i i i i
33) "ENTER 0 TO TEST CRC (NRZI ONLY). OTHERWISE, ENTER 1."
34) And with a life taken adding to cool and them are sentenced.
35 36		ANSWER 0 IF TAPE DRIVE IS 800 BPI NRZI OTHERWISE
20 37		ENTER 1. NEXT A REQUEST IS MADE TO DETERMINE THE ERROR RECOVERY SEQUENCE THAT IS TO BE USED. THIS IS DETERMINED BY THE TYPE OF OPERATING
26 28		SYSTEM THE CONTROLLER WILL BE USED IN. THE REQUEST IS MADE AS FOLLOWS:
39		I STOLEN HIE CONTROLLER WILL DE ODED IN HIE REROEDT IS HIDE HD FOLLOWS.
40		"ENTER 1 IF CONTROLLER WILL BE RUN IN AN AOS SYSTEM. OTHERWISE, ENTER 0, "
41		
42) 9. 3. 2 PROGRAM ENTRY
43		;
44 45		HHEN ENTERING THE RELIABILITY PROGRAM
45 46		THE FOLLOWING MESSAGE WILL BE PRINTED
40 47		; ; "MOUNT SCRATCH TAPE(S). PRESS RETURN TO CONTINUE."
48		<pre>/ nount suknitum inneks). FRESS KETUKN TO CUNTINUE." /</pre>
49		;
50		UNITS TO BE TESTED. ANY TAPE UNIT THAT
51		IS ONLINE WILL BE TESTED. AFTER ALL
52		UNITS ARE READY, ENTER CR. ON THE CON-
53		SOLE TO CONTINUE.
54		i
55		9.3.3 INTERCHANGE TEST, WRITE/READ
56		<i>i</i>
57 50		ENTRY TO THE INTERCHANGE TEST IS IDENT-
58 50		ICAL TO THE RELIABILITY TEST WITH THE
59 60		FOLLOWING EXCEPTION.
00		

, .

9997 UMTR	
61 /	"INTERCHANGE YEST(WRITE/READ)"
82	AFTER THE INITIALIZATION SECTION, THE
0 3 ;	FOLLOWING MESSAGE IS PRINTED.
	"Mount scratch tape(s). Press return to continue."
96;; 97;;	MAKE READY ALL TAPE UNITS TO BE TESTED
0, , 08 ;	AND ENTER CR. TO CONTINUE.
89 ;	9. 3. 4 INTERCHANGE TEST, READ UNLY
10 ;	
11 .	ENTRY TO THE INTERCHANGE TEST IS
12 ;	IDENTICAL TO THE RELIABILITY TEST
13 ; 14 ;	WITH THE FOLLOWING EXCEPTION.
14)	"INTERCHANGE TEST(READ ONLY)"
16 ;	
17)	AFTER THE INTIALIZATION SECTION THE
18 ,	FOLLOWING MESSAGE IS PRINTED.
19 ;	
20 ;	"MOUNT PRE-RECORDED TAPE(S), ENTER CR. TO CONTINUE."
21 ; 22 ;	MOUNT PRE-RECORDED TAPES ON ALL TAPE
23 ,	UNITS TO BE TESTED AND ENTER CR.
24)	
25 ;	9.4 COMMAND STRING INTERPRETER
26 /	
27)	9.4.1 INITIALIZATION
28 ; 29 ;	ALL FROM AND DOCE CONSIDER OF A FORE
- 27	ALL ERROR AND PASS COUNTERS ARE CLEARED AND THE FOLLOWING REQUEST MESSAGE IS
31)	PRINTED.
12 i	
	"SET SWITCH REGISTER TO DESIRED VALUE, THEN PRESS RETURN TO CONTINUE."
34)	
25) 26)	NOTE: THE "X" VALUE INDICATE THE UN-
2 0) 37)	KNOWN STATE OF THE COMMAND BITS.
18)	RESPOND TO THE REQUEST BY SETTING THE
39)	"SWREG" LOCATION AS DESCRIBED BY SECTION
40 (8.3, FOLLOWED BY A CARRIAGE RETURN.
41	
42 ;	THE MEMORY IS SIZED NEXT AND THE TIME
43 · ; 44 ;	BASE IS CALIBRATED. IF A REAL TIME CLOCK
44 , 45 ;	IS NOT PRESENT IN THE SYSTEM, THE FOL- LOWING REQUEST IS PRINTED.
46 ;	
47 ;	"TTO Baud Rate = ?"
48 ;	
49 ;	RESPOND TO THE REQUEST BY TYPING THE
50 ; 51 ;	CORRECT CONSOLE DEVICE BAUD RATE. IF THE
51 ;	RESPONSE IS 110, THE FOLLOWING REQUEST MESSAGE WILL BE PRINTED.
53)	ACCORDE WILL DE FRINTED.
54 2	"# BITS/CHAR = ?"
55 ,	
56 ;	RESPOND TO THE REQUEST BY TYPING 10 OR
57	11
58 , 59 ;	9. 4. 2 PROGRAM ENTRY
- 59 ; 60 ;	THE FOLLOWING MESSAGES ARE PRINTED
,	THE FULLOWING RECORDED FIRE FRINTED

0008 UMTR 01	INDICATING THE ENTRY TO THE COMMAND
82	STRING INTERPRETER.
83	
94	; "Command String interpreter"
85	; "MRXIMUM WORD COUNT = XXXX"
96) NOTT: THE MONTHING HODE, COURT HOLDE
07 88	; NOTE: THE MAXIMUM WORD COUNT VALUE ; INDICATES THE LARGEST DATA
80 89	; INDICHTES THE LARGEST DHTH ; BUFFER AVAILABLE.
10	
11	THE SUB-SYSTEM DEFAULT VALUES ARE SET
12	AS FOLLOWS:
13	
14) UNIT 0 De cettito mentimum ucors condut
15 16) wc set to maximum word count) data random pattern
17	PARITY ODD
18	
19	WHEN THE "UNIT" PROMPT IS TYPED, REFER
20	7 TO SECTION 7.4, FOR PROGRAM OPERATION.
21	10. PROGRAM OUTPUT/ERROR DESCRIPTION
22 23	ALL ERRORS ARE IDENTIFIED, COUNTED AND PRINTED ON
24	THE BASIS OF THE SETTING OF LOCATION "SWREG".
25	
26	IF A UNIT GOES NOT READY, AN APPROPRIATE ERROR
57) 41	MESSAGE AND ITS ACCUMULATED STATISTICAL HISTORY
28 29	IS PRINTED. IF ONLY ONE(1) UNIT IS BEING TESTED, AN APPROFRIATE MEESAGE WILL BE PRINTED AND THE
29 28	HN HPFRUFRIHTE MEESHGE WILL BE PRINTED HND THE PROGRAM WILL WAIT FOR OPERATOR INTERVENTION. IF
31	MORE THAN ONE UNIT IS AVAILABLE. THE TEST PROCESS
32	WILL CONTINUE.
33	,
34	ALL ERRORS ARE SOFT UNLESS SPECIFIED AS HARD OR
15 36	FATAL.
20 27	10.1 STATISTICAL HISTORY PRINTOUT
36	<i>i</i>
39	HE STATISTICAL HISTORY IS PRINTED FOR
40	EACH UNIT WHEN IT REACHES ITS EDT SENSOR.
41 42	THE STATISTICAL HISTORY FOR ALL TESTED UNITS CAN BE REQUESTED BY TYPING A
42	SPACE" CHARACTER, A SAMPLE OF THE
44	PRINTOUT IS AS FOLLOWS:
45	;
46	; "UNIT 0 1"
47	; "PAR WR 1 0"
48 49	7 "PRIR RD 1 1" 7 "PERM WR 1 0"
	; "PERMINEN 0" ; "PERMIRD 0 0"
51	WDS RD 30348 1075827"
52) "WDS WR 31345 1075827"
53) 10.2 STATUS WORD
54)
55 56	BIT DESCRIPTION
06 57	, , 0 ANY EPROP, SET BY BITS 1, 3, 5, 6, 7, 8, 10, 14
58)
59) 1(E) DATA LATE
60	2 REWINDING

8889	UMTR				
01				3(E)	ILLEGAL COMMAND
<i>8</i> 2		j.			
0 3		;		4	HIGH DENSITY
64		j		-5(E)	PARITY ERROR
<i>8</i> 5		j		6(E)	
86		j			
07		j.		7(E)	EOF MARK SENSED
<u>08</u>		j		8(E)	BOT MARK SENSED
8 9		;		9	
10		i			
11		i		10(E)	BAD TAPE
12		;			SEND CLOCK OR ID STATUS
13					FIRST CHARACTER OR CORRECTED ERROR
14					
15		,		13	WRITE LOCKOUT
16		,			CRC ERROR OR ODD REC READ
17		;			UNIT READY
18		,	0?DTD 1		
10 19		12	SPECIAL		
20		/ 12. j	oreu ine		
20 21			12. 1	MENTA C	EL ECTTON
22			16. I	NEVIN D	
22 23		j.		ד הד ד	MENDER TO THE FOR MANNENDER RODER
24 24		1			NFORTANT TO SELECT KNOWN GOOD TAPES
2 4 25		,			REPORMING THE RELIABILITY TESTS. USING
		'			IL TAPE MEDIA WILL CAUSE SOFT AND HARD
26		2			TO OCCURE. TO VERIFIY THE SUB-SYSTEM
27		1			LITY THE TAPE MEDIA SHOULD NOT INFLUENCE
28		1		HE FHS	S OR FAIL CRITERIA
29		j.			
30		:	12.2	DHIH EN	II KY
31		1			
2		1			BER ENTRIES MUST BE ON OCTAL. ANY OTHER
33)		ENTRY W	ILL BE CONSIDERED AS AN ALPHA CHARACTER.
34		3			
35		713.	RUN TIM	E	
6		i i			
37					TIME IS DEPENDENT ON THE LENGTH OF THE
38			TAPE ME	DIA.	
39			EGT		

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Sec	01 LMG	ang ass	- MRI	FR 6	XEV 64,20		10 30 50 30/28/84
01	101 C141	ineral inara V					10.02.02.03.00.00.
02		÷					
83. Ad) 		1			
84 05			****	Acalcalca)	cicicici cie);;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	kakakakakaka	######################################
85 96) : DESCE	IPTI	∩N·	STREAMET	2 MAG TA	APE CONFIGURATOR (PRE-DEFINED)
90 97		;					
<u>98</u>		;					
89		; FRODU	ICT OF	F ZE	ETACO, 198	34	
10		;******	ckiekiekieki	****	ka kak akakakakaka	*****	hakana anyakana katakatakatakata katatatan katatan katatan katatan katatan katatan katatan katatan katatan kata
11		· <u>1</u> .	PRO	GKAP	I NHME, LI	4G. SR	
12		2			ana ang ang ang ang ang ang ang ang ang		
13		; 2.	RF∆	1510	ON HISTORY	ť.	
14 15		÷	REV		OHTE		
10 16		, ,	811. 00		11/13/8:	1	
17 17		REM			- 0 3/27/84		251AC0
18					MENTS		
19			575	TEH	EXECUTATI	ABLE	
20		/ 1 .	Sum				
21							ED 10 CONFIGURE A STREAMER MAG TAPE, FOR
22		i.	HIG	H SF	PEED AND I	oynam1C	ΩĤP.
23		į.	/ Water	r 1 - 1	diana tanàna dia		NAR HERE MER IN
24 25		,	UUN	ria.		i): UT L MINIMUR	L(A WITH BI) 5 = 1: H nool
20 26					18 9	DYNAM10	
27					3	HIGH SF	
28		2				LIMITS	
29		,			5	STREAM	ER MODE SELECT
36		1			-		
1		<u>,</u>	LIM	ITS			
32		1	5		10	MAX	MIN
33		1	0		Ū.	7566	NOMINAL
34 33		1			9 9	150MS 300MS	
34 36			i		ਦ ਦੇ	Seleno 4SEC	NOMINAL NOMINAL
-7			ā	т Й	6	75MS	
38			8	-		15645	
33					1	SOOMS	
49		1	1	÷	1	4SEC	12605
41							
42		,	÷NO	ïE:			ONLY TRUE IF DRIVE IS STREAMING, IF
43		1	-T T	. .		IONING (OCCURS GAP IS OF NOMINAL LENGTH(NOMINAL IS .6 IN)
45			. TI . NR		LNG		
	000001020426	LOOD-	LDA		Ø, C22		PRIMARY TAPE
47	00000 020720		20E		0,022		ENABLE (SYSTM (RDOS)
	6666376666461		JMP		. +1		NO ERROR / DEBL
49	000641826424		LDA		0, CWORD		CONFIGURATION WORD
50	000051061022		DOĤ		0,22		CONFIGURE PRIMARY MT
	000061020420		LbA		0, C22		
52			200		. •		2. SYSTM (RDOS)
	000111000401		JMP		+1		/ DDIS
54 55	000121020415		LDH		0,062		an an the second second
	90015/000401		20E JMP		. +1		7. SYSTM (RDOS) 7. DEBL
	00010/000401		LDA		U CHORD		
	000171061062		DOA		0,62		CONFIGURE SECONDARY
	000201020407		LDA		9,062 9,062		
60			20D). SYSTM (RD05)

9602 LNG **81 866**237868481 JMP +1). DDIS RETURN 82). Systm (RDOS) 03 00026/000022 (22) 22 _), RTN 04 000271000062 062: 62 85 88838 882888 CHORD: 2888 NOMINAL GAP, LOW SPEED, AND STREAMER SELECT MODE. 86 . END LOAD ***000000 TOTAL ERRORS, 000000 FIRST PASS ERRORS

0003 LMG

022	0600261		1/46	1/51	2/03#		
062	0000277		1/54	1/59	2/04#		
CWORD	000030		1/49	1/57	2(05#		
LOAD	000000		1/46#	2/ 86			
CODIS	001711	MC	1/52	1/60			
OEBL	991671	MC	1/47	1/55			
?RETU	666481	MC	2/82				
SCHL 3	6666691		1/48	1/53	1/56	2/91	2/03

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0001 LDG75	ROS RSSE	MELLER R	EV 04.20	10.04-3	2 80, 28/84	
01	;					
82	1					
83	,					
94	j skakadenkadenkadenkadenkaden kal	*****	******	<mark>lakakakakakak</mark> akakakokokokokokok	****	kakaka kakaka kaka kaka kaka kaka kaka
85	;					
96 1	; descri	PT10N:	STREAMER	R MAG TAPE CONFI	GURATOR (PRE-DEF	-INED)
07	;					
<u>98</u>	;		7000 400			
99			TACO, 198			
10					*******	kakakakakakakakakakakakakakakakakakaka
11 12		FRUURHI	NAME	AU (D, DK		
13) + 2.	PEVISIO	N HISTORY	<u>.</u>		
14	, <u>.</u>		14 - 14 - 17 - 17 - 17			
15		REV.	DATE			
16			11/13/81			
	REV	91.9	, 63/27/34	ZETROU		
18	73.	REQUIRE	MENTS.			
19	;	SYSTEM	EXECUTATE	IELE		
20		SUMMARY				
21					FIGURE A STREAME	er Mag Tape, for
22	1	HIGH SF	eed and c	YANAMIC GAP.		
23	,					
24	1	CUNFIGU		HTIN ADD RO REFER	His 5 = 1:	
್ರಾರ್ ಕ್ರಿತ್ ನನ	1			MINIMUM GAP*		
26 26	-			DYNAMIC GAP HIGH SPEED		
20 78	•		-	LIMITS		
<u>29</u>				STREAMER MODE S	EI EPT	
			-	- PRACINGALA ROUTE - P		
	1	EIMITS.				
			10	H E X	HIN	
22				75/45	NOMINAL	
34	1	8 1		150MS	NOMINAL	
35	•	i 9	a '	300MS	NOMINAL	
26	,	1 1	0	4SEC	NOMINAL	
27		0 Ø	Û.	7545	Joms	
38			1	15045	60MS	
29		1 8			90MS	
40	3	1 1	Ĺ	4320	120MS	
41 42	2	a kura a ra		seven electronica a substante	10 66106 15 50	THE CHARGE STR
42 43) }	*NU1E)		MAP IS ONLY TRUE		REHMING, IF LENGTH(NOMINAL IS .6 IN)
12		TITL		iunina uccore an	r 15 OF NUMINAL	LENGIRVNUNINHE 15.5 IN/
45		NREL				
46 00000/020426		LDA	0,022		PRIMARY TAPE	
47		2DEBL				; SYSTM (RDOS)
48 00003/000401		JMP	+1		NO ERROR	/ DEBL
49 00004/020424		LDÁ	0, CNORD		CONFIGURATION	WORD
50 00005/061022		DOA	0,22		CONFIGURE PRIM	MARY MT
51 000061020420		LDA	Ø, C22			
52		20019), SYSTM (RDOS)
53 00011/000401		JMP	1). DDIS
54 000121020415		LDA	0,062			
25 22 22 00015 000104		2DEBL				; SYSTM (RDOS)
56 00015 000401		JMP 1 No	. +1 			AL DEBL
57 00016 020412 58 00017/061062		LDA	0,CWORD		CONDICTION CODE	3 1 6600
- 38 00017 061062 - 59 000201020407		doa Lda	0, 62 0, 062		CONFIGURE SEC	and the t
07 00020 020407 60		20015	01002			, systm (RDOS)
00		.0015). STSTREARUS/

0002 LDG75 01 000231000401 02 03 000261000022 C22:	JMP ?return 22	. +1	2. DD15 2. SYSTM (RDOS) 2. RTN
04 000271000062 C62 : 05 000301002100 CHOR D: 06	62 21 00		;75MS MAX GAP, MIN NOMINAL GAP, LOW SPEED, ;AND STREAMER SELECT MODE.
й 7	END	LUAD	

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07 . END LUND **00000 101AL ERRORS, 00000 FIRST PASS ERRORS

0003 LDG75

022	0000261		1/46	1/51	2/03#		
662	8000277		1/54	1/59	2/04#		
CWORD	0000307		1/49	1/57	2/85#		
LOHD	0000000		1/46#	2/87			
7001S	001711	MC	1/52	1/60			
7DEBL	001671	MC:	1/47	1/55			
PRETU	866491	MC	2/ 62				
?XCAL	986661		1/48	1/53	1/56	2/91	2/03

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99901 HNG	ent et	CEME: FP	REV 04.20	19	0.05-31-03/28/84	
81	1001.00		NET 94.29	10	1.00 31 03/20/07	
82	,					
83 83	j.					
05 04	•	***	*****	a sinaka kaka kaka kaka ka	***	*****
85	;					
00 06			STREAME	r Mag Tapp	CONFIGURATOR (PRE-DE	FINED)
97	;					
08 08	, ;					
89		ист О Е 71	ETACO, 19	84		
10						***
11			M NAME: H			
12	· 1.	a kuuduna a		(462. 241)		
		PEVISI	ON HISTOR	Ų .		
14	, <u>c</u> .	nu rawa				
15		REV.	DATE			
16	,		11/13/8			
17	REV				TACO	
18	, ser , 3.	REGUIR		·7 Lula		
19	·		EXECUTAT	ari F		
20	4	SUMMAR				
21	· · · ·			PROVIDED T	o configure a stream	ER MAG TAPE, EOR
				DYNAMIC GAP		
	,					
24	, ,	CONFIG	RATION S	ITS OF DOA	WITH BIT 5 = 1:	
25	:	200111 2 2		MININUM GA		
26	, ,			DYNAMIC GA		
27	;			HIGH SPEED		
28			-	LIMITS		
29			-	STREAMER M	ODE SELECT	
36			_			
31	i.	LIMITS				
32		6 7		MAX		
30	· •	શે છે		75145	NOMINAL	
34		8 1		150MS	NOMINAL	
5		i U	9	Saams	NOMINAL	
36		1 1	9 0	4SEC	NOMINAL	
		я й	Й	7545	BANTS	
18		0 1	i	15045	60MS	
39	,	1 0		200115	90MS	
49	,	1 1	1	4SEC	120MS	
41	,					
42	;	*NOTE:	MIMIMUM	GAP IS ONLY	TRUE IF DRIVE IS ST	REAMING/ IF
43	;		REPOSIT	IONING OCCU	RS GAP IS OF NOMINAL	LENGTH(NOMINAL IS .6 IN)
		TITL	HNG			
45		. NREL				
46 00000102042	26 LOAD :	LDA	8,022		; PRIMARY TAPE	
47		?DEBL			ENABLE	, SYSTM (RDOS)
48 00003 00040	91	JMP	. +1		NO ERROR) DEBL
49 00004/02042	24	LDA	0, CNORD		CONFIGURATION	WORD
50 00005106100	2	00 H	8, 22		CONFIGURE PRI	M FR Y MT
51 00006 02042	<u>9</u> 0	LDA	Ø. C22			
52		2001S				/. SYSTM (RDOS)
52 00011/00040		JHP	. +1			A. DDIS
54 06012102043	5	LDR	0, 062			
55		?DEBL), SYSTM (RDOS)
56 00015/00040		JMP	+1) DEBL
57 00016/02043		LDA	0, CHORD			
53 00017/06106		DOA	0, 62		CONFIGURE SEC	ONDARY
59 00020102040)7	LDA	0,062			
60		?DD15), SYSTM (RDOS)

0002 HNG), DDIS JMP +1 01 00023 900401 2RETURN 3. SYSTM (RDOS) Ø2). RTN 03 000261000022 0221 22 . 04 000271000062 C62: 62 ; Nominal GAP, High speed, and streamer select mode. 05 00030/062200 CWORD: 2200 END LOAD 96 **00000 TOTAL ERRORS, 00000 FIRST PASS ERRORS

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8663 HNG

022	0600261		1/46	1/51	2/03#		
062	000027/		1/54	1/59	2/04#		
CHORD	0000301		1/49	1/57	2/05#		
LOHD	0666667		1/46#	2/ 96			
20013	801711	MC	1/52	1/60			
?DEBL	001671	MC	1/47	1/55			
FETU	966491	ĦC	2/82				
?XCAL	000001		1/48	1/53	1/56	2/01	2/03

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9991 HDG75	HOS ASSEMBLE	R REV 04.20	10:05:00 03/23/84
01	;		
82	j.		
03	j		
04 95	; ************************************		
05 86	; ; DESCRIPTION: STREAMER MAG TAPE CONFIGURATOR (PRE-DEFINED)		
807	; DESCRIPTION. STREAMER AND THE CONTROLATION AND SETTINGS?		
88	, ;		
09	; product of Zetaco, 1984		
10	; ************************************		
11	71. PROGRAM NAME: HDG75. SR		
12			
13		SION HISTORY:	
14 15	; ; REV.	NOTE	
10 16	; REV. ; 00		
		0 03/27/84	ZETACO
	73. REQUIREMENTS:		
19	SYSTEM EXECUTATABLE		
20	24. SUMMERY.		
21	, THIS PROGRAM IS PROVIDED TO CONFIGURE A STREAMER MAG TAPE, FOR		
22) HIGH	SPEED AND DYNAMIC	GAP
23) CONTICUENTION FITS (A FOR USING FITS $\mathbf{F} = \mathbf{A}$.		
24 25	/ CONFIGURATION BITS OF DOA WITH B17 5 = 1: / 10 MINIMUM GAP*		
26	,	9 DYNAMI	
	,	S HIGH S	
28	<i>j</i>	6-7 LIMITS	
29	L	5 STREAM	ER MODE SELECT
30		-	
34	LIMI		
32	÷ 6		MIN
33 74	-	0 0 75MS	NOMINAL
34 35	-	1 0 150MS 0 0 300MS	
36		0 0 30003 1 0 45EC	
37		0 0 75MS	30/15
38	, 0		60MS
39		0 I 300MS	90M5
40	, 1	1 1 4SEC	12045
41			
42 43			ONLY TRUE IF DRIVE IS STREAMING, IF
45	; TIT	L HDG75	OCCURS GAP IS OF NOMINAL LENGTH(NOMINAL IS , 6 IN)
45	. NRE		
46 000001020426			PRIMARY TAPE
47	?DEB		; ENABLE ; SYSTEM (RDOS)
48 00003/000481	JMP	+1) NO ERROR () , DEBL
49 00004/020424		0, CWORD	CONFIGURATION WORD
50 00005/061022			CONFIGURE PRIMARY MT
51 000061020420		0,022 C	
52 53 00011/000401	2001 JMP	≥ . +1	2. SYSTM (RDUS) 2. DDIS
54 00012/020415			1. 010
55	20EB		↓ SYSTM (RD0S)
56 00015 000401		- +1). DEBL
57 000161020412			
58 00017 061062		0,62	CONFIGURE SECONDARY
59 000201020407			
60	?DDI	5	; SYSTM (RDOS)

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9682 HDG75 JMP +1). DDIS 01 000231000401 J. SYSTM (RDOS) PRETURN 82 ; RTN 22 03 000261000022 C22: 84 866271866662 C62: 62 75MS MAX GAP, MIN NOMINAL GAP, HIGH SPEED, 05 00030/002300 CHORD: 2300 ; AND STREAMER SELECT MODE. Ø6 , END LORD 07 ***00000 TOTAL ERRORS, 00000 FIRST PASS ERRORS

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8663 HDG75

622	000026/		1/46	1/51	2/03#		
062	0000277		1/54	1/59	2/04#		
CHORD	6666381		1/49	1/57	2/85		
LOHD	0000000/		1/46#	2/97			
?DD15	901711	MC	1/52	1/60			
20EBL	001671	MC	1/47	1/55			
?RETU	006401	MC	2/82				
?XCAL	000001		1/48	1/53	1/56	2/01	2/83

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1≝ 2		;							
<u>{</u> }		;							
•		;		•					
		;							
5		; · ****** *	****		****	***********			
,		; ;							
}		, ;							
ý			ION:	STRND-	RLONE STREAME	(MAG TAPE CONFIGURATOR(CONSOLE PARAMETER	୪)		
)		;							
1		;							
2		; PRODUCT	OF ZE	TACO, 19	981				
3		;*****	****	*****	****		niciak		
		. T	ITL	THPEM					
5	000001	. D	USR	X=1	•				
5	000000	. T	XTM	Ø					
7		31. PR	ogram	NAME TI	HPEMODE. SR				
3		;							
9		2. REVISI	on hi	STORY					
0		;	•						
1		; RE			DATE				
2		; 0	0		12/10/81				
3		; 0	1		03/27/84	130 TO 133 AND PROPER DEVICE			
4		;				CODE ROUTINE			
5		i							
6		3. MACHINE REQUIREMENTS:							
7		3.1 NOVA/ECLIPSE FAMILY PROCESSOR							
8		3.2 8K READ/WRITE MEMORY							
9		3.3CONSOLE DEVICE3.4ZETA 133 (6021 OR 6125) MAG TAPE COUPLER BOARD,							
0									
1		; 4	ITH A	FORMAT	ted streamer	iape drive.			
2									
3			MMARY						
4		THIS PROGRAM IS INTENDED FOR USE WITH THE MT133 COUPLER TO SET							
5		 CONFIGURATION AS DESIRED WHEN PROGRAM ASKS. CONFIGURATION BITS OF DOA WITH BIT 5 = 1: 							
6			NEIGU						
7		į		10	HINIMUM GAP	r			
8		<i>i</i>		9	DYNAMIC GAP				
9		j		8	HIGH SPEED				
0		j		6-7	LIMITS				
1 2)		5	streamer mu				
2 3		. IT	MITS:	-					
4		i Ll	7 7	18	MAX	MIN			
5		; 0	8	8	75HS	NOMINAL			
6		; 0	1	0	15945	NOMINAL			
7		; 1	Ō	õ	300115	NOMINAL			
8		; <u>1</u>	1	õ	4SEC	NOMINAL			
9		; 0	ō	0	75MS	30#5			
0		; 0 ; 0	1	1	15015	60MS			
1		; 1	Ō	1	100MS	90MS			
2		; 1	1	1	4SEC	12045			
3		; <u> </u>	*	*	7-60	TCUIT			
4			NTF I	мтмтмим	GAP IS MULU	RUE IF DRIVE IS STREAMING, IF			
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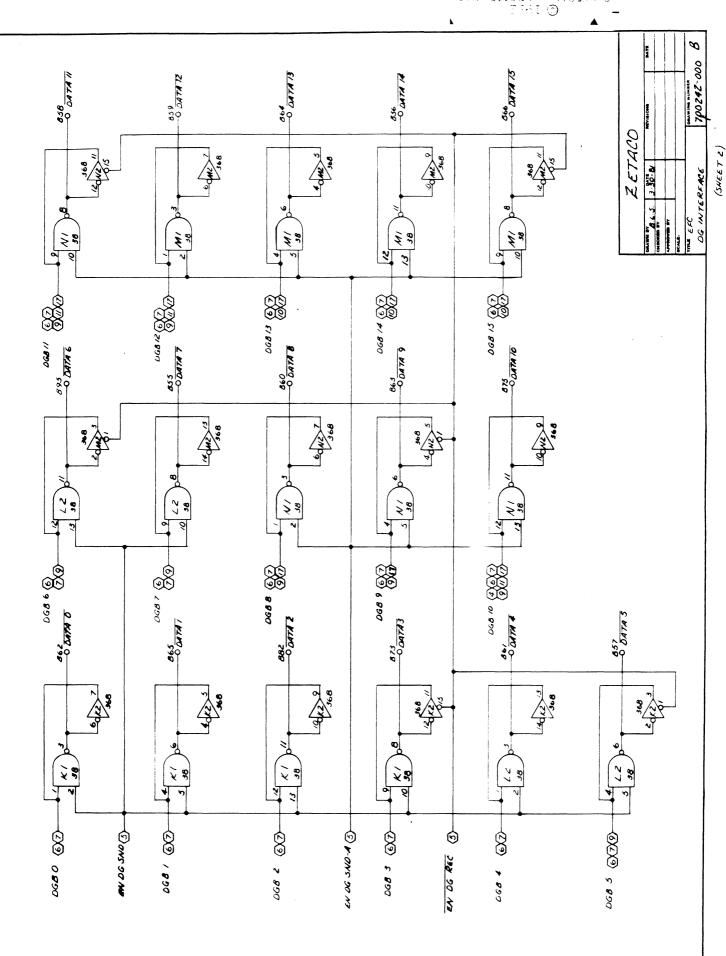
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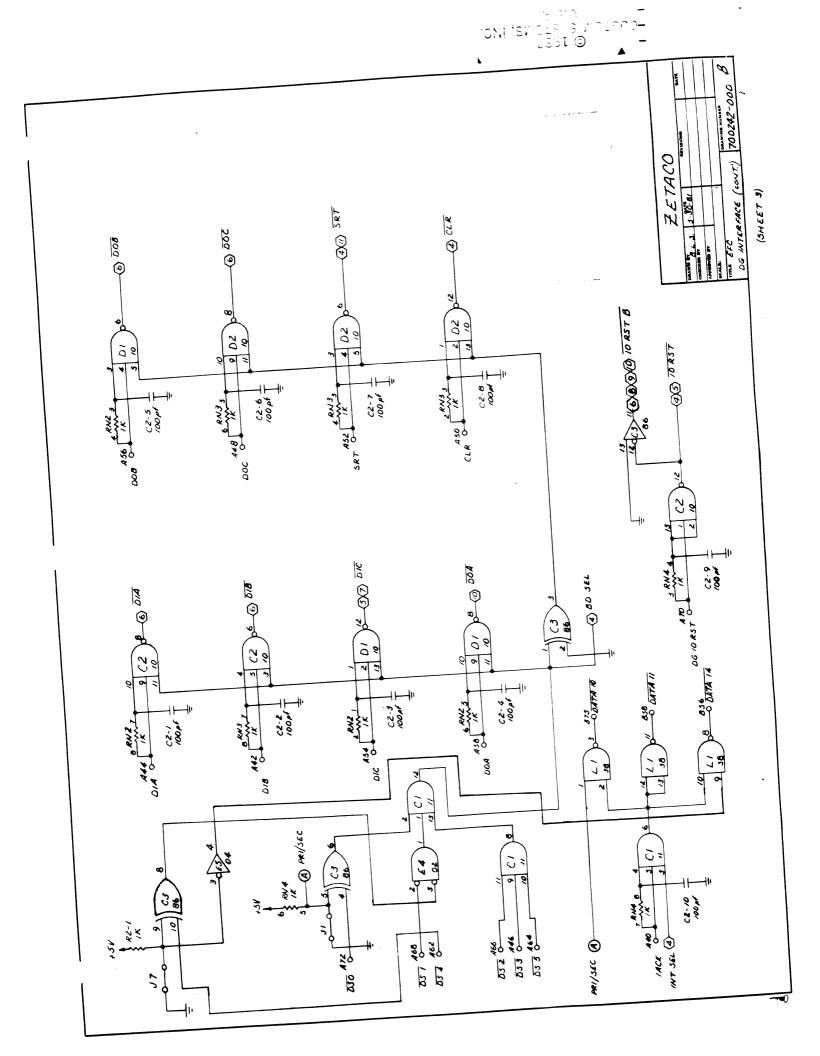
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REVISION HISTORY DATE AFFECTED SHEL 5-27-82 1, 12, 13 9-17-82 1, 4, 9, 13, 14, 11 7-193 7,17 9-29-83 34,5,6,7,6,9,11,12,13,15,17 9-29-83 34,5,6,7,6,9,11,12,13,15,17 9-29-83 34,5,6,7,6,9,11,12,13,15,17 9-29-84 SHEET 5,7,10,5/1 2-18-84 SHEET 5		10TE: 1. NUMBERS FOUND NITHIN THE HERAGON 51MBOLS INDICATE SHEETS WHERE CONTWUED LOGIC WILL BE FOUND EXAMPLE: @= SHEET 2.	(5HEET 1-18) <u>ZETA(0</u> <u>Man 9,445</u> <u>2,10,91</u> <u>Man 9,445</u> <u>2,10,91</u> <u>Man 133</u> CUPLER <u>703,242-000</u> 8 (5HEET 1 OF 17)
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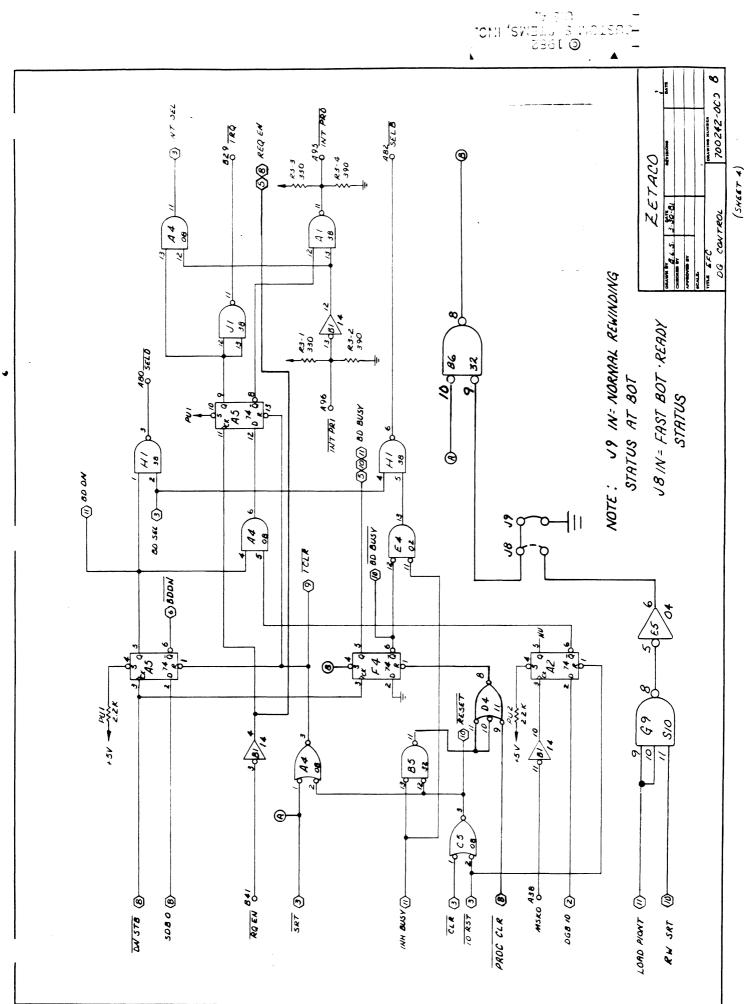
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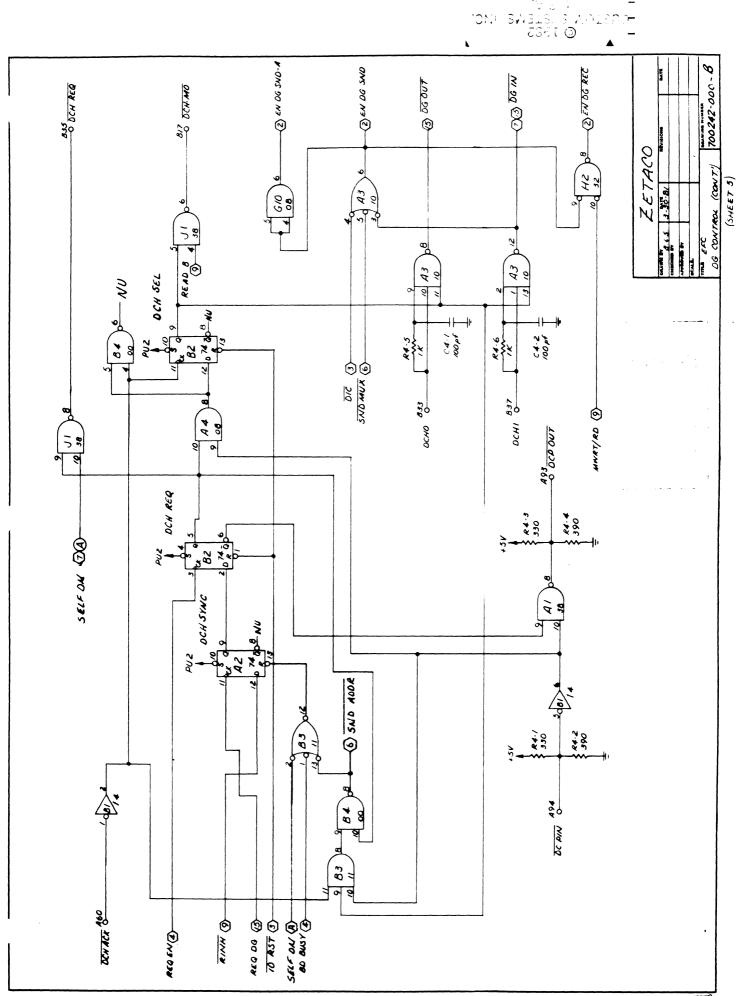


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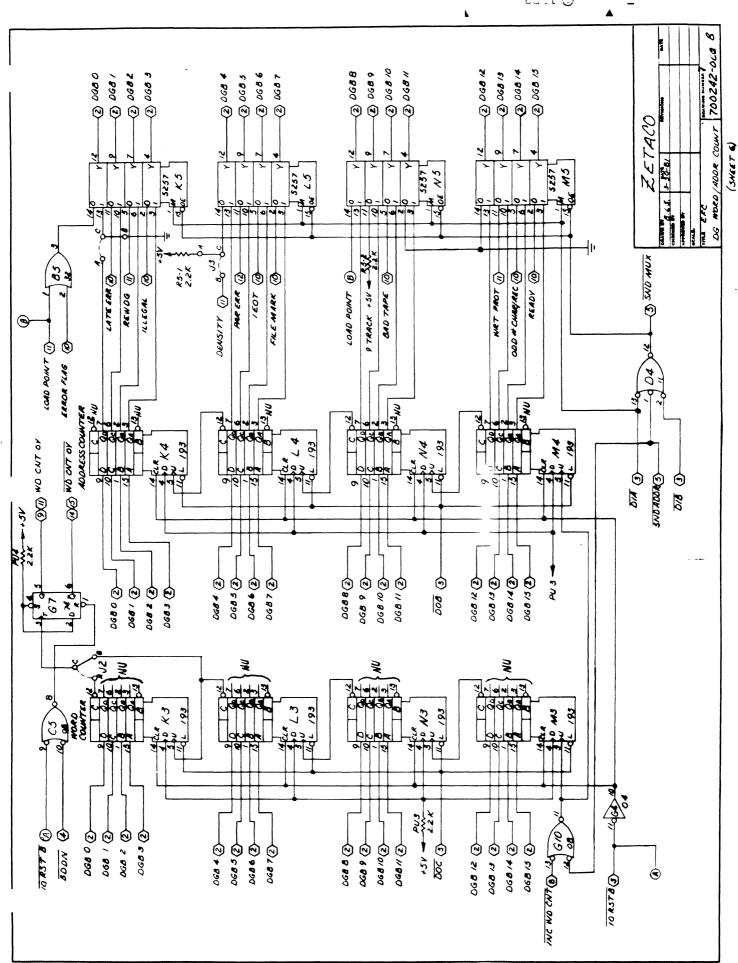
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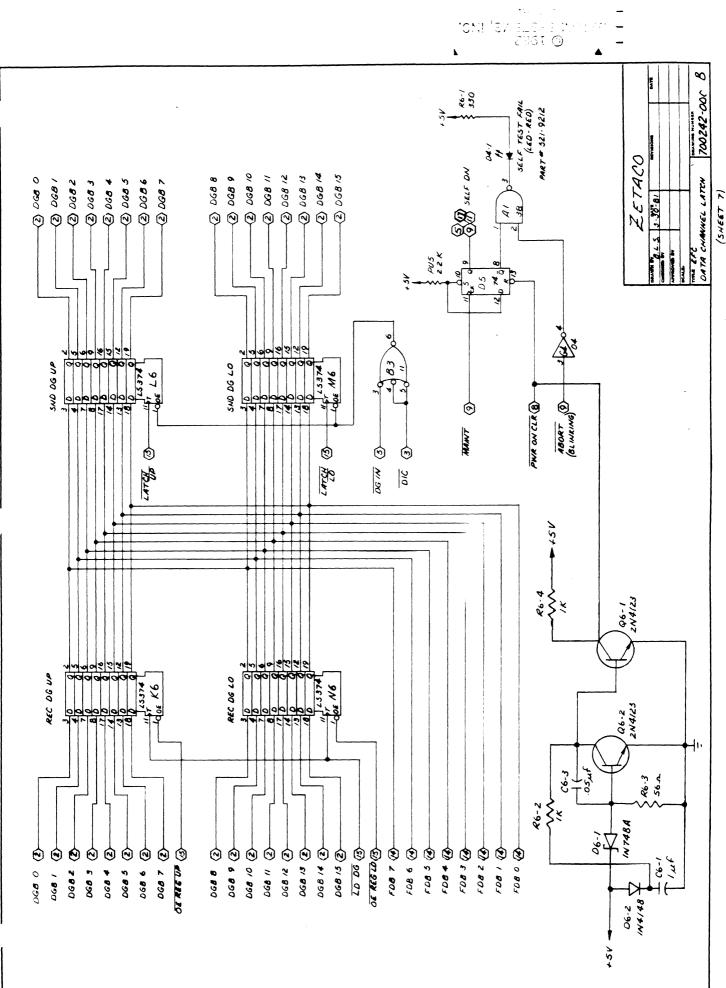


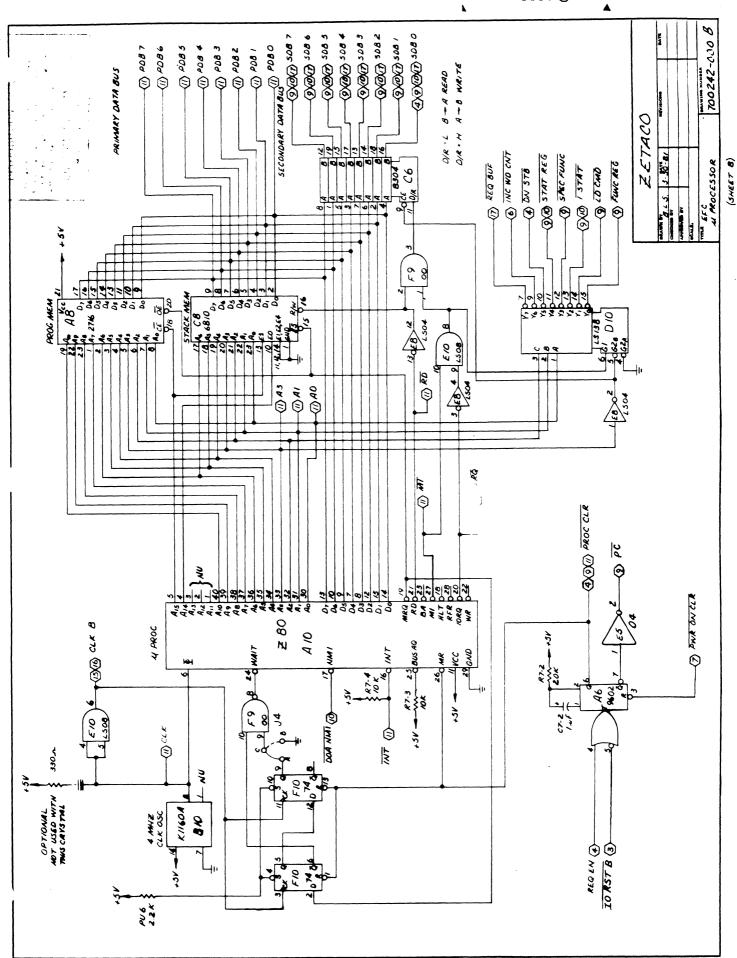


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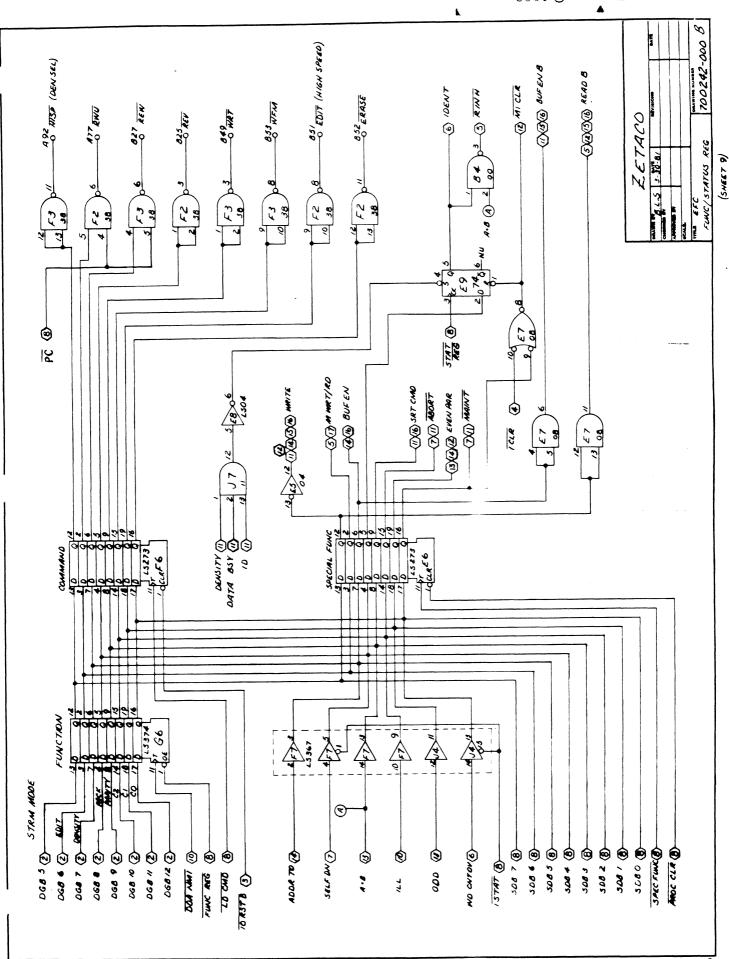


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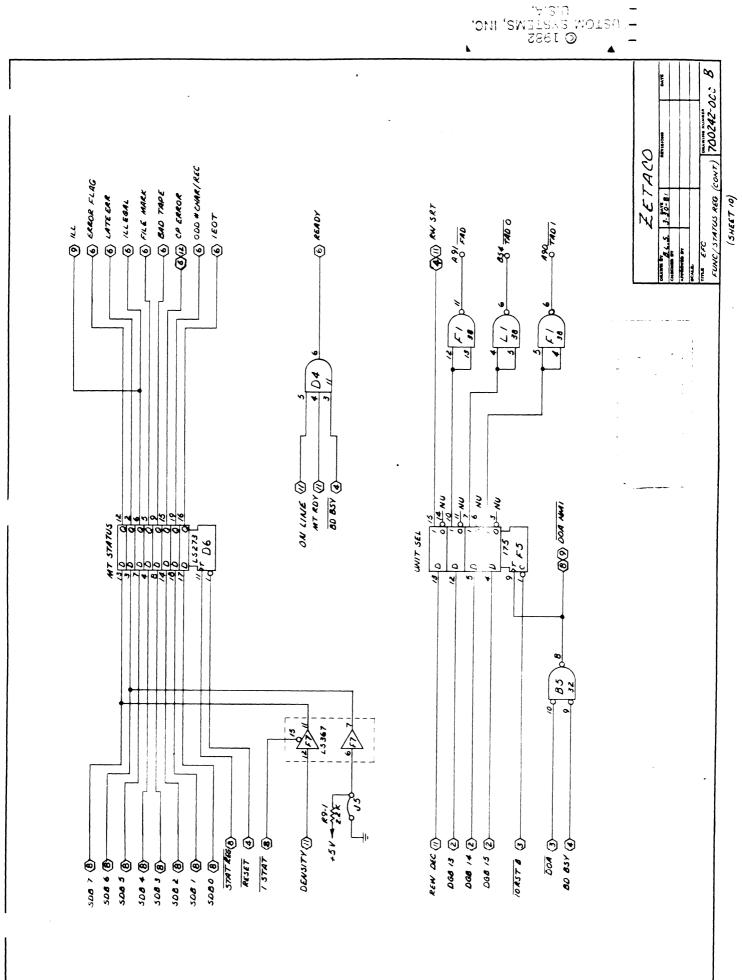




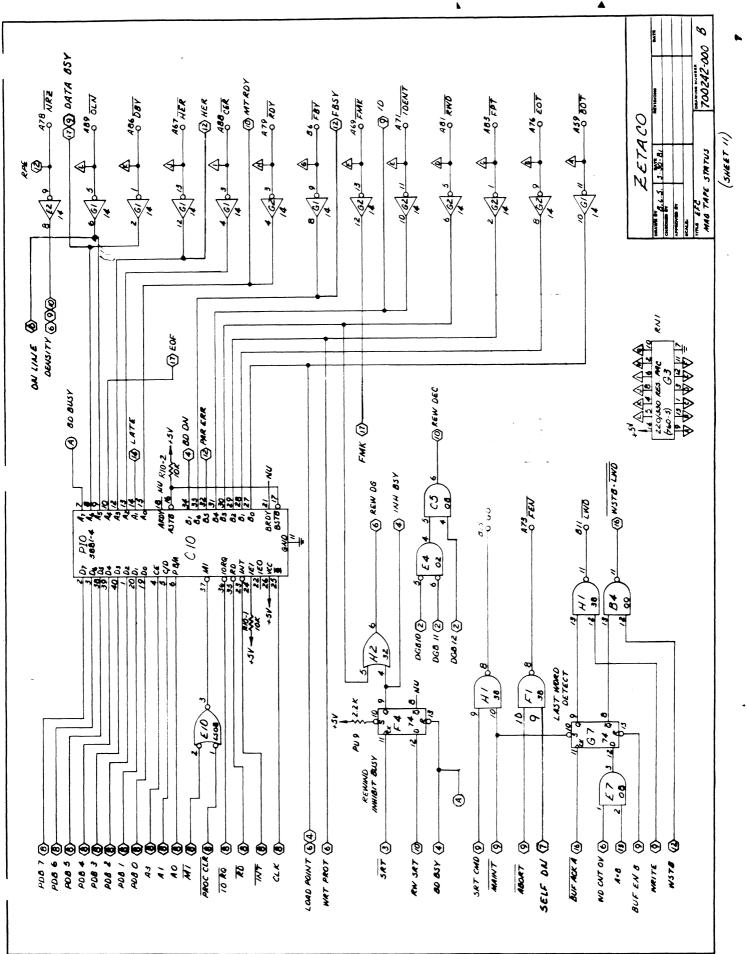
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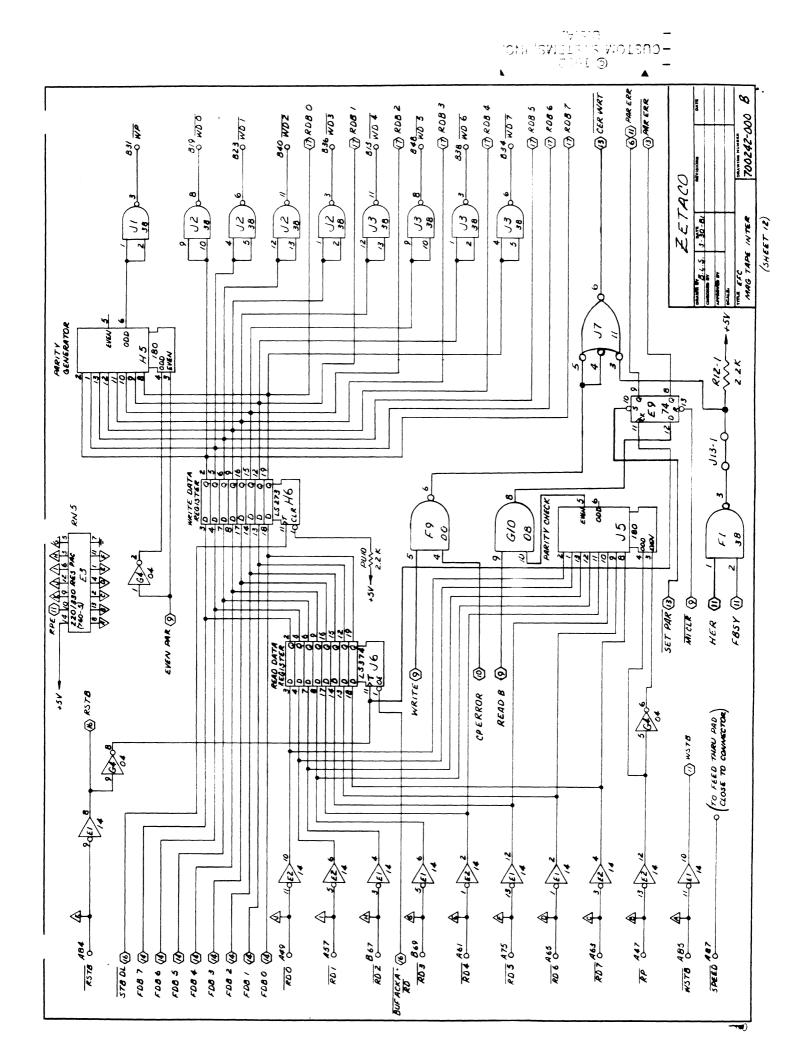
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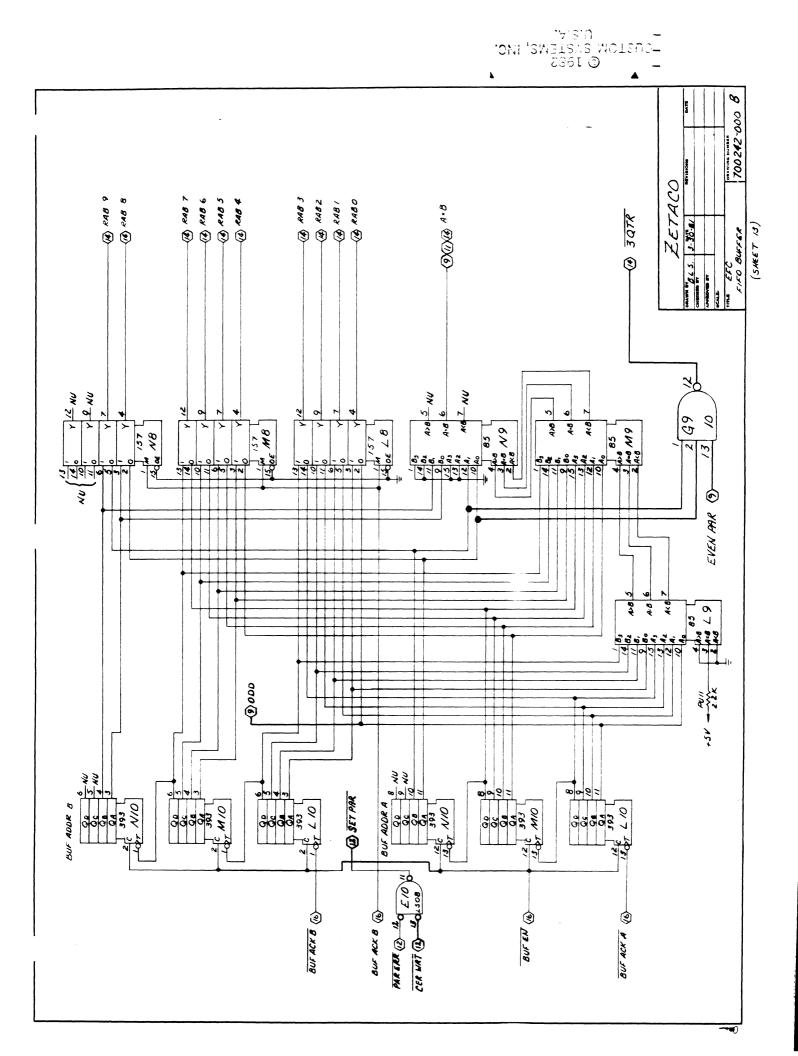


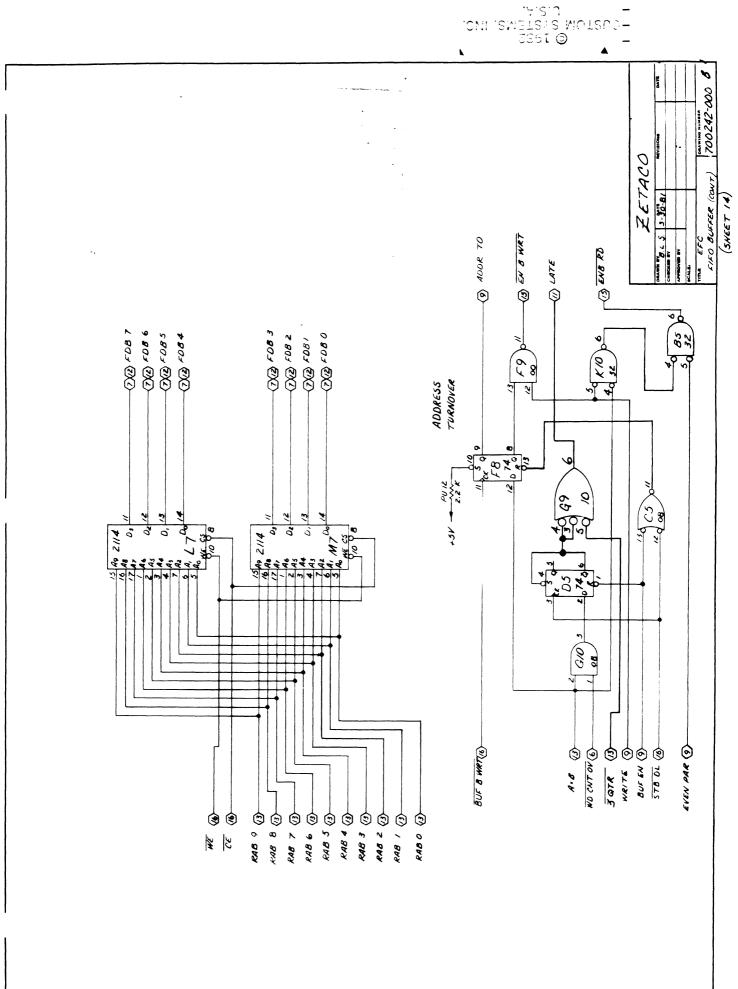
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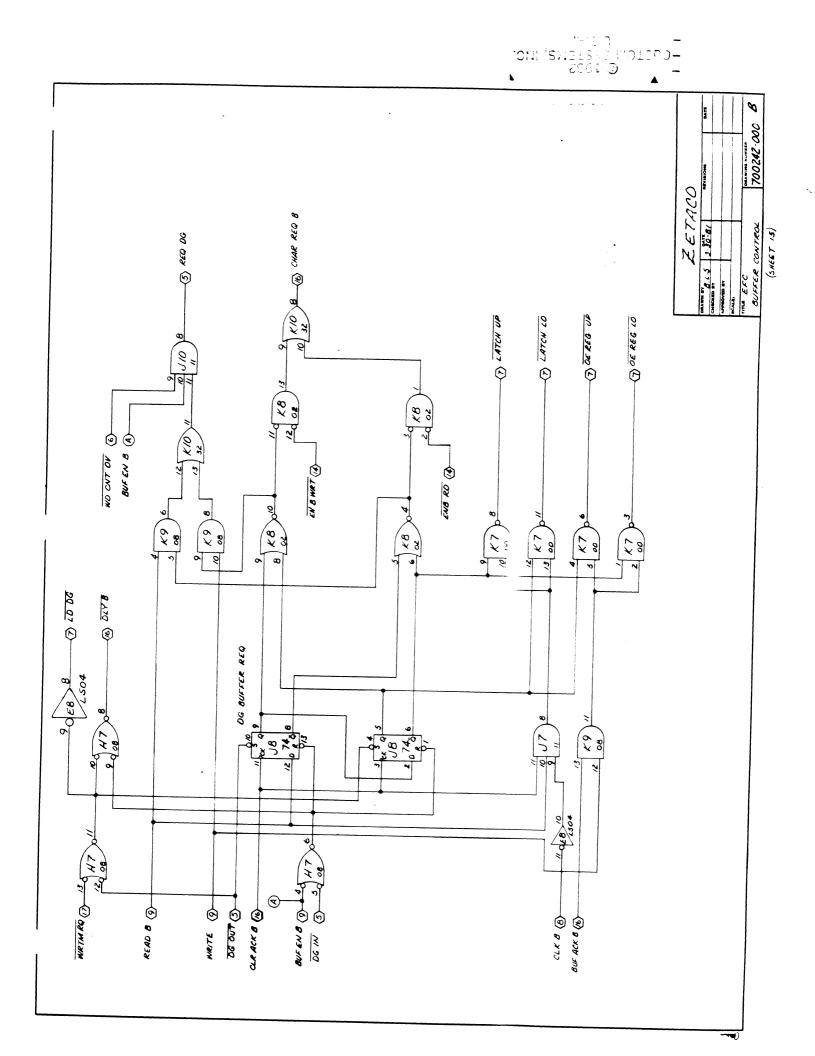


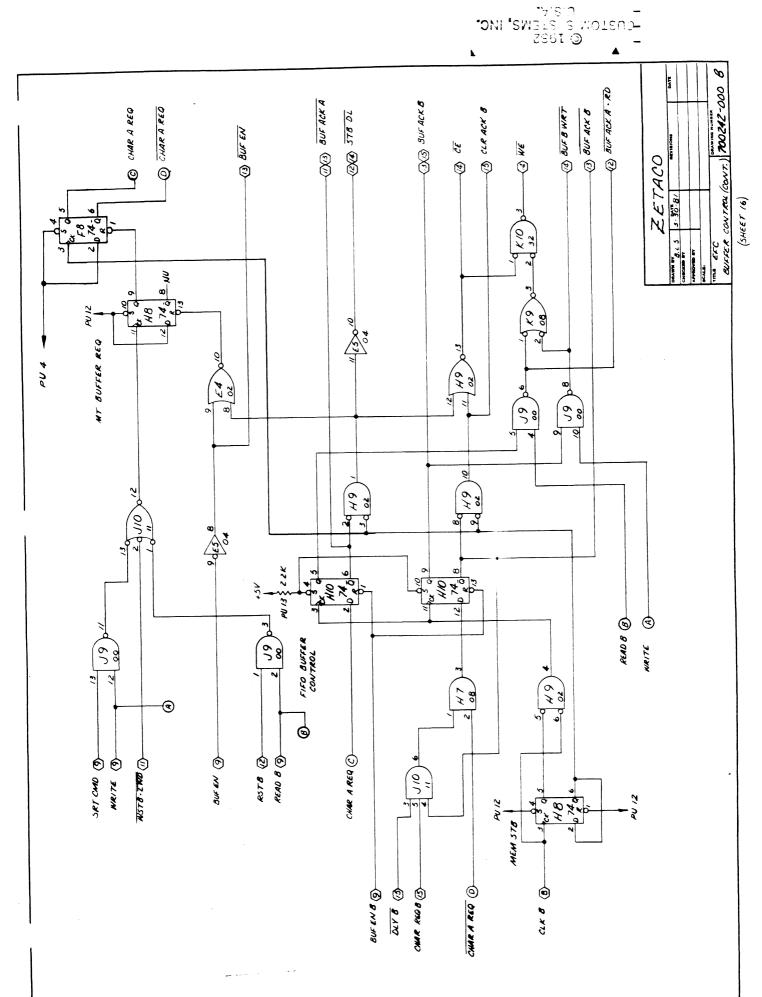
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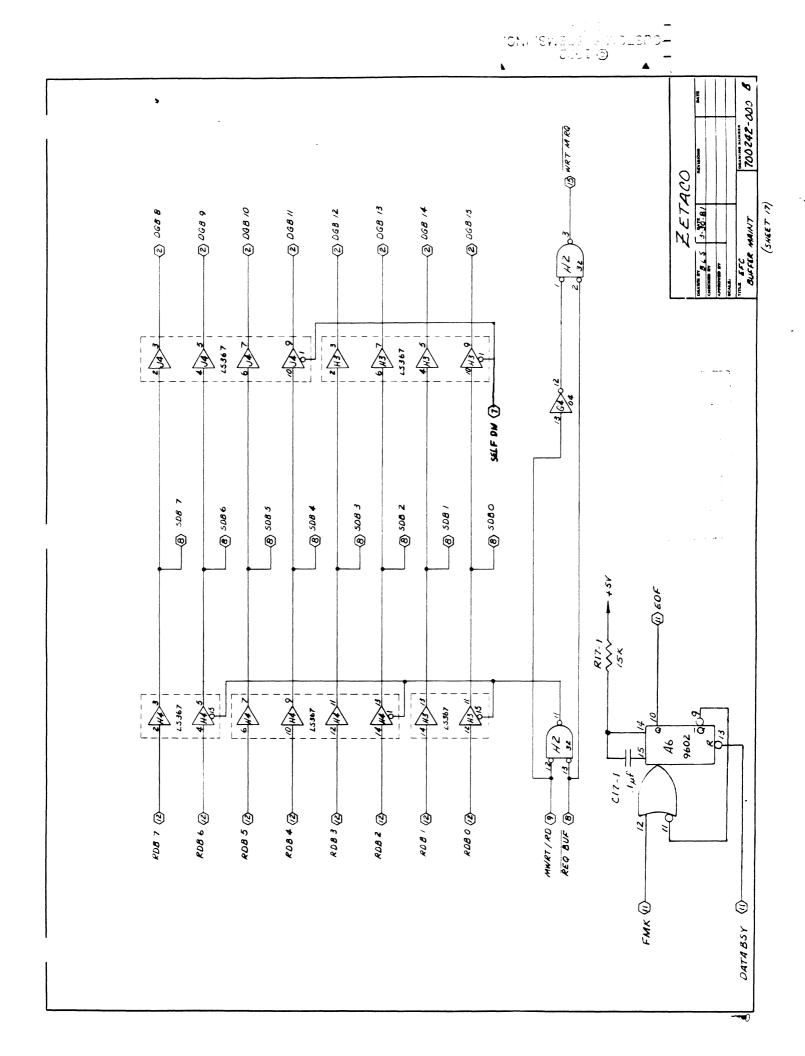


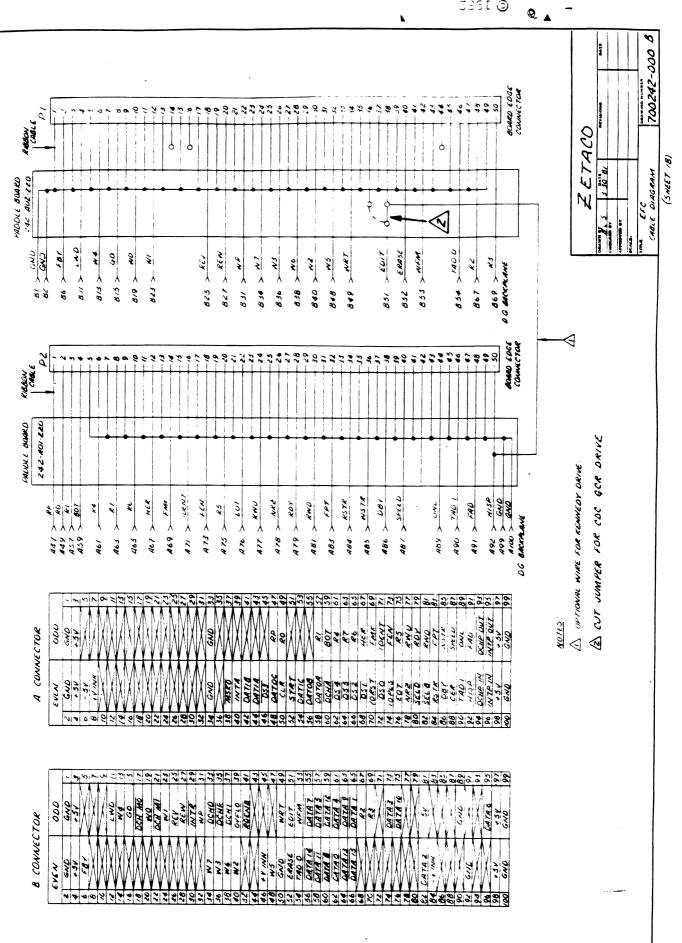






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