

# MONITOR MTR-90

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ZENITH DATA SYSTEMS SAINT JOSEPH, MICHIGAN 49085

# TABLE OF CONTENTS

ntroduction	• •	. 3
Theory of Operation		. 4
Power Up and Reset		. 4
General Operations		. 4
Clock Interrupts	• •	. 4
MTR-90 Commands		. 5
B(oot)		. 5
B(oot) S(D)		. 6
C(onvert)		. 7
G(o)		. 7
I(n)		. 7
O(ut)		. 8
P(rogram Counter)		. 8
R(adix)		. 9
S(ubstitute)		. 9
T(est Memory)		. 9
V(iew)		10
V(Iew)		
Program Execution Control		11
Appendix A MTR-90 Listing		. 12
MTK-90 Fishing		
Appendix B Octal Definitions		136
Appendix C		120
Hexadecimal Definitions	• •	130
Appendix D		
SW501 Switch Settings	••	140
Appendix E		4 4 4
CPU Jumpers	• •	141

## INTRODUCTION

This Manual describes the functions and operation of the Z-89/90 Monitor Program, MTR-90, which is contained in a read-only memory (ROM) on the Z-89/90 CPU board. Some of the major features of MTR-90 include:

Disk system bootstrap routines.

Memory contents display and alteration.

Program execution control.

Variable radix settings for display addresses and conversion.

Input/output to specified ports.

Memory diagnostic routine.

In addition, by means of a flag byte maintained in read/write memory, MTR-90 can be instructed to bypass some or all of its normal functions. In this manner, a sophisticated user can augment or replace these functions.

### THEORY OF OPERATION

This section supplements information in the "Operations" and "Circuit Description" sections of your Z-89/Z-90 Operations Manual. In order to use all of the features of MTR-90, it is necessary to understand the 8080 and Z-80 opcodes and the circuitry of your Z-89/90. This section details the operation of MTR-90. For a listing of the MTR-90 program, see Appendix A.

#### Power Up and Reset

MTR-90 initializes the Z-89/90 whenever you apply power to or reset the computer. To power up, use the switch on the right rear of the Z-89/90. To reset, simultaneously press the RESET key and the right-hand shift key on the keyboard. When reset, MTR-90 sounds the electronic "bell" and displays the "H:" prompt on the terminal screen.

During the initialization procedure, MTR-90 determines the high limit of continuous RAM. Once MTR-90 has established this high memory limit, the Z-80 stack pointer is set to the value of the upper memory limit. Then MTR-90 enters a loop and awaits a command.

#### **General Operations**

When you power up or reset your Z-89/90, MTR-90 responds by clearing the screen and displaying "H:". This "H:" prompt informs you that MTR-90 is ready to respond to commands. When you enter a character, MTR-90 will either accept it, completing a command word, or beep, which signifies an invalid command word or an inability to boot.

The DELETE key kills a partially entered line and causes MTR-90 to return the "H:" prompt. This is useful for correcting typing errors.

#### **Clock Interrupts**

The clock interrupt is a crucial element in the operation of the Z-89/90. It is a level one interrupt, and is generated on the Z-89/90 CPU board every two milliseconds. MTR-90 maintains a tick counter called "TICCNT", which counts one tick every 2 milliseconds. Refer to the listing in Appendix A for the location of TICCNT.

Note that MTR-90 uses interrupts, so you should not disable interrupts using the DI instruction for other than very short periods of time. MTR-90 also requires a stack pointer at the top of memory with at least 80 bytes of stack area.

NOTE: In this manual, the symbol  $\triangle$  means press the space bar and 9 means press the RETURN key.

## **MTR-90 COMMANDS**

The following section summarizes valid commands to MTR-90. Each command is listed in alphabetical order along with a brief explanation and examples. You need only enter the first letter of these commands — MTR-90 will respond with what is enclosed in parentheses. In most cases, you will need to press RETURN before MTR-90 will respond. Where a command requires numeric input, we have used the hexadecimal, octal, and split octal number bases.

#### B(oot)

Typing B(oot) and pressing RETURN initiates boot from drive 0 of the disk drives which have been configured for primary boot using SW501 switch 4 (see Appendix D). This command may optionally be followed by a unit number which specifies a drive other than drive zero. The unit number may be optionally followed by a command string which begins with a colon. The command string is currently used only by those Heath/Zenith operating systems which support the H/Z-67 Winchester disk subsystem. For more detailed information about how MTR-90 accomplishes bootstrap, see Appendix A.

If the boot fails, the computer will display a question mark, beep, and display the H: again. The possible causes for a boot failure include:

- 1. The boot device is not activated within 15 seconds.
- 2. The DELETE key is pressed during boot.
- 3. Switch SW501 is not set properly.
- 4. A disk error occurs.

The DELETE Key cancels the B(oot) command and repeats the H: prompt, unless boot has already begun, in which case the system displays the message "PBoot Error".

EXAMPLE 1: Boot from unit zero of the primary boot drives.

H: B(oot) ®

EXAMPLE 2: Boot from unit 2 of the primary boot drives.

H: B(oot)2 @

EXAMPLE 3: Boot from primary boot Z-67 unit 2, passing the command line "HDOS;1" to the secondary Z-67 boot routine.

H: B(oot)2:HDOS;1 @

#### B(oot) S(D)

The B(oot) S(D) command initiates boot from unit zero of the drives which have been configured using SW501 switch 4 as secondary boot drives (see Appendix D). This command may optionally be followed by a unit number which specifies a drive other than drive zero. The unit number may be optionally followed by a command string which begins with a colon. The command string is currently used only by those Heath/Zenith operating systems which support the H/Z-67 Winchester disk subsystem.

If the boot fails, the computer will display a question mark, beep, and display the H: again. The possible causes for a boot failure are:

- 1. The boot device is not activated within 15 seconds.
- 2. The DELETE key is pressed during boot.
- 3. Switch SW501 is not set properly.
- 4. A disk error occurs.

The DELETE key cancels the B(oot) S(D) command and repeats the H: prompt, unless boot has already begun, in which case the system prints the message "?Boot Error".

EXAMPLE 1: Boot from secondary boot drives, unit zero.

H: B(oot) S(D) @

EXAMPLE 2: Boot from unit 2 of the secondary boot drives.

H: B(oot) S(D)2 @

EXAMPLE 3: Boot from secondary boot Z-67 unit 2, passing the command line "HDOS;1" to the Z-67 boot routine.

#### C(onvert)

The C(onvert) command converts a sixteen-bit number specified in the opposite radix to the current radix. To set the current radix, see the **R(adix)** command on Page 9.

EXAMPLE: Convert FFFF hex to split octal, where octal is the current radix.

```
H: (C(onvert)FFFF @ 377377
H:
```

#### G(o)

The G(o) command initiates a user program, beginning at the address specified in the current radix as an argument to the G(o) command. If no argument is supplied with the G(o) command, then execution begins at the address contained in the program counter.

EXAMPLE: Go to address 40200 octal.

#### I(n)

I(n) inputs a number from the port specified as an argument to the I(n) command. The port number must be specified in the current radix.

EXAMPLE: Input data from port 177 octal, where octal is the current radix.

```
H: I(n)177 @ 370
H:
```

#### O(ut)

The O(ut) command outputs the specified data to the specified port. The first number is the port, and the second the data. Both values should be expressed in the current radix, and should be separated by a comma.

EXAMPLE: Send FF out port A7, where hex is the current radix.

```
H: O(ut)A7,FF @
```

#### P(rogram Counter)

The P(rogram Counter) command sets the current address in the program counter. This command is used to specify the object of the G(o) command. The address specified should be expressed in the current radix.

Simply typing P and RETURN causes the system to display the current contents of the program counter and then to await a new value. Typing P followed by a value sets the PC to that value. Typing P and RETURN, then pressing RETURN again without entering a value terminates the command and does not alter the PC.

EXAMPLE 1: Set the program counter to 100 hex, where the current radix is hexadecimal.

```
H: P(rogram Counter) 100 @ H:
```

EXAMPLE 2: Display the contents of the program counter without altering its contents.

```
H; P(rogram Counter) @ FFFF @ H:
```

EXAMPLE 3: Set the program counter to 40100 octal after examining the current value, where the current radix is octal.

```
H: P(rogram Counter) @ 377377 40100
H:
```

Note that the operator entered the 40100 in this example.

#### R(adix)

The R(adix) command sets the current working radix for all other commands.

Valid arguments to radix are O(ctal) and H(exadecimal). The default current radix on power up is octal. Typing R and RETURN with no argument displays the current radix.

EXAMPLE: Set the current radix to hexadecimal and then check it.

```
H: R(adix) H(exadecimal)
H: R(adix) @
Hexadecimal
H:
```

#### S(ubstitute)

The substitute command can be used to examine or alter the contents of a memory location. The argument to S(ubstitute) is the first address to be examined (and optionally changed). When the starting address has been entered and terminated by pressing RETURN, the system displays address/value pairs. To replace the old value with a new one, type a new value, then a space. To proceed to the next memory location, type a space without entering anything else. To examine a previously displayed memory location, type a hyphen. To terminate, press RETURN.

EXAMPLE: Modify address 40100 octal, where octal is the current radix, then check the memory location.

```
H: S(ubstitute) 40100 <sup>®</sup>
40100 000 377 Δ [operator types 377 and a space]
40101 000 - [operator types a hyphen]
40100 377 <sup>®</sup> [operator presses RETURN]
H:
```

#### T(est Memory)

The T(est Memory) command initiates the RAM memory test. The test references memory locations in the current radix. Error messages report the addresses of any bad memory locations.

#### V(iew)

The V(iew) command displays the contents of blocks of memory on the screen in the current radix and in ASCII. Non-printable characters appear as a graphics dot. Characters with the high order (parity) bit set appear in reverse video. The display begins at the first address specified, and continues through the second address. Starting and ending addresses should be separated with a comma.

If no starting or ending address is given, or if an address of zero is specified as the starting or ending address, the display begins at zero. V(iew) displays 128 bytes of data in octal if the current radix is octal, or 256 bytes in hexadecimal if the current radix is hexadecimal. Subsequent V(iew) commands which do not supply an argument display the next 128 or 256 bytes, depending on the setting of the current radix.

EXAMPLE 1: View the contents of memory locations 2280 through 2300 hex, where hexadecimal is the current radix.

```
H: V(iew)2280,2300 @ 2280 20 21 32 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F !"#$%&'()*+,-./2290 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F !"#$%&'()*+,-./H:
```

EXAMPLE 2: View the contents of memory locations 0000 through 0128, where the current radix is octal. Then proceed to examine the next 128 bytes.

EXAMPLE 3: View memory locations beginning with 2280 hex and continuing for 256 bytes, where hexadecimal is the current radix.

## PROGRAM EXECUTION CONTROL

When debugging an assembly language program, you can use MTR-90 commands to set breakpoints at, and continue execution from, various points in the program. Debugging can take place at any location above the lower 4K of memory. Be careful not to attempt to debug a program in the lower 4K of memory, as this area is occupied by MTR-90.

To set a breakpoint, use the S(ubstitute) command and put an HLT (hexadecimal 76, octal 166) instruction wherever you want the program to stop.

When your program reaches the breakpoint HLT instruction, it will return control to MTR-90 which will display an "H", then advance to a new line and display "H:". You can then use any MTR-90 command.

To continue your program, first restore the byte in the location into which you placed the breakpoint HLT. Since the computer had to execute the HLT instruction, the PC will point one beyond where you placed the HLT. To continue, decrement the PC value by one. Do this by entering the P(rogram Counter) command and pressing RETURN. When MTR-90 has displayed the current value of the PC, subtract one from that value, then enter the result into the PC.

You can alternatively use the G(o) command to start the program from whatever address you prefer, including from the location where you put the HLT.

Note that if the program which you are debugging uses keyboard interrupts, your program may contend with MTR-90 for console input. Your program should see every character input because the program receives the input via interrupts. But if the MTR-90 checks the keyboard for input after your program, the MTR-90 will not receive the input and no characters will be displayed on the screen. In other words, the fact that your keyboard input does not appear on the screen during program debugging using breakpoints does not mean that your program is at fault.

# Appendix A

# MTR-90 Listing

This appendix contains a listing of MTR-90. This program contains control routines for primitive keyboard input and screen output. MTR-90 needs available RAM in locations 2000H (040 000 octal) to 203FH (40 077 octal) and from 2150H (41 120 octal) to 2155 (41 125 octal). MTR-90 also needs 80 bytes of stack area in high memory.

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144X ** GASSETTE PORTS 145X 145X 146X IP-TPC EQU 371Q TAPE CONTROL IN 147X GP-TPC EQU 370Q TAPE DATA IN 149X IP-TPD EQU 370Q TAPE DATA IN 149X OP-TPD EQU 370Q TAPE DATA GUT 149X OP-TPD EQU 370Q TAPE DATA GUT 151X ** ASCII CHARACTERS 152X 152X 152X 155X A-8TS EQU 002Q SYNC CHARACTER 155X A-8TS EQU 002Q BACKSTACE CHARACTER 155X A-8TS EQU 012Q BACKSTACTER 155X A-8TS EQU 012Q CARIAGE RETURN ( 158X A-6TS EQU 033Q ESCAPE CHARACTER 159X A-6TS EQU 033Q ESCAPE CHARACTER	
144X ** CASSETTE PORTS  145X 145X 146X IP-TPC EQU 371Q TAPE CONTROL IN 148X IP-TPC EQU 371Q TAPE DATA OUT 149X OP-TPD EQU 370Q TAPE DATA OUT 149X OP-TPD EQU 370Q TAPE DATA OUT 151X ** ASCII CHARACTERS 152X 152X 152X 153X A.SYN EQU 026Q SYNC CHARACTER 155X A.STX EQU 002Q SYNC CHARACTER 155X A.STX EQU 002Q SYNC CHARACTER 155X A.EE EQU 012Q BACKSPACE CHARACTER 155X A.EE EQU 012Q BACKSPACE CHARACTER 157X A.EF EQU 012Q CARIAGE RETURN ( 158X A.ESC EQU 033Q ESCAPE CHARACTER	
146X IP.TPC EQU 371Q TAPE CONTROL IN 148X IP.TPC EQU 370Q TAPE CONTROL OUT 148X IP.TPD EQU 370Q TAPE DATA IN 149X OP.TPD EQU 370Q TAPE DATA OUT 151X ** ASCII CHARACTERS 152X 152X 152X 153X A.SYN EQU 026Q SYNC CHARACTER 154X A.STX EQU 002Q SYNC CHARACTER 155X A.STX EQU 012Q BACKSTARC CHARACTER 155X A.STX EQU 012Q CARRIAGE RETURN ( 158X A.CR EQU 012Q CARRIAGE RETURN ( 159X A.ESC EQU 033Q ESCAPE CHARACTER	
148X   IP.TPD   EQU   370Q   TAPE DATA IN     149X   OP.TPD   EQU   370Q   TAPE DATA QUT     151X   #   ASCII CHARACTERS     152X   152X     154X   A.STX   EQU   026Q   STX CHARACTER     154X   A.STX   EQU   002Q   STX CHARACTER     155X   A.BEL   EQU   010Q   BACKSPACE CHARACTER     156X   A.BEL   EQU   010Q   BACKSPACE CHARACTER     156X   A.EF   EQU   012Q   CARRIAGE RETURN (   158X   A.CR   EQU   015Q   CARRIAGE RETURN (   159X   A.ESC   EQU   033Q   ESCAPE CHARACTER     150X   A.ESC   EQU   033Q   ESCAPE     150X	
149% OP.TPD	
151X ** ASCII CHARACTERS 152X 152X 153X A.SYN EQU 026Q SYNC CHARACTER 154X A.STX EQU 002Q STX CHARACTER 155X A.BEL EQU 010Q BACKSCHER 155X A.BE EQU 012Q BACKSCHER 157X A.F EQU 012Q CARRIAGE RETURN ( 158X A.CR EQU 015Q CARRIAGE RETURN ( 159X A.ESC EQU 033Q ESCAPE CHARACTER	
151X ** ASCII CHARACTERS 152X 152X 153X A.SYN EQU 026Q SYNC CHARACTER 154X A.STX EQU 002Q STX CHARACTER 155X A.BEK EQU 010Q BELL CHARACTER 155X A.BEK EQU 010Q BACKSPACE CHARACI 157X A.LF EQU 012Q LINE FEED CHARACI 158X A.CR EQU 015Q CARIAGE RETURN ( 159X A.ESC EQU 033Q ESCAPE CHARACTER	
153X A.SYN EQU 026Q SYNC CHARACTER   154X A.STX EQU 002Q STX CHARACTER   155X A.BEL EQU 010Q BACKSTER   155X A.BKS EQU 012Q BACKSPACE CHARACTER   157X A.LF EQU 012Q CARIAGE RETURN (	
154X A.STX EQU 002Q SIX CHARACIEK 155X A.BEL EQU 007Q BELL CHARACIEK 156X A.BS EQU 012Q BACKSPACE CHARACI 157X A.LF EQU 012Q LINE FEED CHARACI	
155X A.BEL EUU 0074 BECKENER 156X A.BKS EUU 0120 BACKSPACE CHARACI 157X A.LF EQU 0120 LINE FEED CHARACI 158X A.CR EQU 0159 CARRIAGE RETURN ( 159X A.ESC EQU 0330 ESCAPE CHARACIER	
157X A.LF EQU 012Q LINE FEED CHARACT 158X A.CR EQU 015Q CARRIAGE RETURN ( 159X A.ESC EQU 033Q ESCAPE CHARACTER	
158X A.CR EQU 0159 CARIAGE RETURN ( 159X A.ESC EQU 0339 ESCAPE CHARACTER	
159X A.ESC EQU 0330 ESCAPE CHARACTER	
160x A.DEL FOU 1770 DELETE UK KUBUUT CHAKACIEK	œ

				70-834-/T 07:01:01
	162X **	FRONT	RONT PANEL HARDWARE	CONTROL BITS
000.020			00010008	SINGLE STEP INTERRUPT
000.040	165X CB.MTL	m n	001000008	
000.200	167X CB.SPK	ı m	100000008	SPEAKER ENABLE
	169X **	DISPLAY	Y MODE FLAGS (IN	N *DSPMOD*)
000*000	170X 171X DM.MR	EQU	0	MEMORY READ
000 001 000 002	172X DM.MW 173X DM.RR	EQU	1 2	MEMORY WRITE Register Read
000.003	174X DM.RM	Eau	3	REGISTER WRITE
	176X **	MACHINE	E INSTRUCTIONS	
000.166	177X 178X M1.HIT	Foll	1	
000,311		EQU	110010018	RETURN
000.323		For	110100118	ANTUI
000.072	182X MI.LDA	- 1	0011100	L0A
000, 021	183X MI.ANI 184X MI.LXI	E00 0 E00	111001108	ANI LXI D
000,303 000,335	185X MI.JMP	EQU Fou	110000118	JAP ID IX. CRYTE A)
000.041			001000018	IX, (BYTE
000.375	188X MI.LOYA		111111018	IY, (BYTE
000-010			000010000	AFPAF
000, 335 000, 351	AXIL.IM X191		110111018	1
000,375 000,351		1 1	111111018	(IY) (BYTE
	1 1			
	196X ** 197X *	USER OF	ER OPTION BITS.	
		E	ESE BITS ARE SET IN CELL .MFLAG.	CELL . MFLAG.
000, 200	200X UD.HLT	EQU	100000008	DISABLE HALT PROCESSING
000,002		1	901000000	DISABLE DISPLAY UPDATE
000.000	204 204	XTEXT	00000018 H170EF	ALCUM PRIVATE INTERRUPT PROCESSING EQUATES FOR HIT BOOT ROM

206X *** H17 CONTROL INFORMATION.  207X 208X DF.HD EQU 000000018 210X DF.HP EQU 000000108 211X DF.HP EQU 000001008 211X DF.HP EQU 000000108 21X DF.HP EQU 000000108 21X DF.HP EQU 000000108 222X DF.HR EQU 000000018 222X DF.HR EQU 000000018 223X DF.HR EQU 0000000018 223X DF.HR EQU 000000018 223X DF.HR EQU 000000018 223X DF.HR EQU 0000000018 223X DF.HR EQU 00000000018 223X DF.HR EQU 00000000000000000000000000000000000	10:40:28 17-FEB-82
208X DP.DC EQU 07FH  208X 208X DP.DC EQU 00000018  2110 DF.HD EQU 00000108  2113 DF.SD EQU 00000108  2134 DF.SD EQU 00000108  2135 DF.HC EQU 00000108  2140 DF.HC EQU 00000108  2150 DF.HC EQU 00000018  2150 DF.HC EQU 00010008  2150 DF.HC EQU 00100008  2150 DF.HC EQU 00100008  2150 DF.HC EQU 00100008  222X DF.HR EQU 01000008  222X DF.HR EQU 01000008  222X DF.HR EQU 01000008  222X DF.HR EQU 00000018  225X DF.HR EQU 00000018  235X DF.HR EQU 00000018  235X DF.HR EQU 00000018  235X DF.HR EQU 00000018  235X DF.HR EQU 000000018  235X DF.HR EQU DF.HH IIIOHS.  245X A** CADSYM EQU 0F.PH  245X A** CADSYM EQU DF.HR EQU 000000018  255X DF.CHARCTER DF.HHIIONS.  255X DF.DC.HIIONS.  255X DF.DC.HIIONS.  255X DF.CHARCTER DF.HHIIONS.	
210X DF.+HD EQU 0000001B 211X DF.1D EQU 0000010B 213X DF.4D EQU 0000010B 213X DF.4D EQU 0000010B 213X DF.5S EQU 0000010B 215X DF.4DS EQU 0000010B 215X DF.4DS EQU 0000010B 215X DF.4DS EQU 0000000B 215X DF.4DS EQU 0000000B 222X DF.4M EQU 1000000B 222X DF.4M EQU 1000000B 222X DF.4M EQU 0001000B 223X UP.5P EQU 07EH 223X UP.5F EQU 07EH 223X UP.5F EQU 07EH 233X UP.5F EQU 07EH 233X UF.4P EQU 07EH 233X UF.4P EQU 0000010B 234X UF.4P EQU 0000010B 235X UF.4P EQU 0000001B 235X UF.4P EQU 00000010B 235X UF.4P EQU 0000000B	CONTROL PORT
211X DF.TO EQU 000000108 213 X DF.SO EQU 000001008 213 X DF.SO EQU 000000108 215 X DF.NS EQU 000000108 222 X DF.NR EQU 00100008 222 X DF.NR EQU 01000008 223 X DF.NS EQU 07DH 223 X DF.NS EQU 07DH 224 X EQU 07DH 225 X DF.NR EQU 07DH 227 X DF.NR EQU 07DH 238 X DF.NR EQU 07DH 239 X DF.NR EQU 07DH 237 X DF.NR EQU 07DH 238 X DF.NR EQU 07DH 239 X DF.NR EQU 07DH 237 X DF.NR EQU 07DH 238 X DF.NR EQU 07DH 247 X X DF.NR EQU 07DH 250 X DR.STAT EQU DK.PDRT+2 251 X DF.NR EQU DK.PDRT+2 251 X DF.NR EQU DK.PDRT+2 252 X DR.STAT EQU DK.PDRT+2 253 X DR.STAT EQU DK.PDRT+2 254 X DR.NR EQU DK.PDRT+2 255 X DR.STAT EQU DK.DRT+2	DETECT
213X DF.SD EQU 00001008 214X 215X DF.NG EQU 000000108 215X DF.NG EQU 000000108 219X DF.NG EQU 000010008 219X DF.NG EQU 000100008 222X DF.NR EQU 010000008 222X DF.NR EQU 010000008 223X 224X 224X 225X UP.SF EQU 07DH 227X UP.SF EQU 07DH 237X UP.SF EQU 07DH 231X UP.SF EQU 07DH 233X UP.SF EQU 07DH 233X UP.SF EQU 07DH 233X UP.SF EQU 07DH 233X UP.SF EQU 07DH 234X UF.RDA EQU 07DH 235X UF.RDA EQU 000000108 235X UF.RDA EQU 0000000108 235X UF.RDA EQU 07EH 235X UF.RDA EQU 000000018 245X *** H37DEF - H37 DISK CDNTRO 247X *** H37DEF - H37 DISK CDNTRO 255X FD.REK EQU DK.PDRT+2 255X FD.REK EQU DK.PDRT+1 255X FD.REK EQU DK.PD	K O DETECT
215X DF.NG EQU 00000018 216X DF.DSO EQU 000000108 2175X DF.DSI EQU 00010008 2175X DF.DSI EQU 00010008 220X DF.DI EQU 00100008 220X DF.DI EQU 00100008 221X DF.NR EQU 10000008 222X DF.NR EQU 10000008 222X DF.NR EQU 070H 225X UP.DF EQU 070H 225X UP.SC EQU 070H 231X UP.SC EQU 076H 231X UP.SC EQU 076H 233X UF.RDA EQU 00000108 233X UF.RDA EQU 00000108 235X UF.RDA EQU 00000108 247X 245X EQU 06.871A EQU 06.80R1+2 255X FD.RCA EQU 06.80R1+1 255X FD.RCA E	DETECT
216X DF-D50 EQU 00000010B 218X DF-D51 EQU 0000100B 219X DF-D51 EQU 00001000B 219X DF-D51 EQU 00001000B 222X DF-NR EQU 1000000B 222X DF-NR EQU 1000000B 225X DF-NR EQU 0000000B 225X DF-NR EQU 0000000B 225X DF-NR EQU 0000000B 225X DF-RP EQU 07EH 233X UP-SF EQU 07EH 233X UP-SF EQU 07EH 233X UP-SF EQU 07EH 233X UP-SF EQU 07EH 233X UF-RP EQU 0000001B 233X UF-RP EQU 0000001B 233X UF-RP EQU 0000001B 235X UF-RP EQU 0000001B 235X UF-RP EQU 0000001B 235X UF-RP EQU 0000001B 235X UF-RP EQU 0000000B 235X FD-STAT EQU 0X-PDRT-2 255X FD-STA EQU	GATE
217X DF-DS1 EQU 0001000B 219X DF-MD EQU 0001000B 219X DF-MD EQU 0010000B 220X DF-MR EQU 1000000B 225X DF-MR EQU 1000000B 225X DF-MR EQU 1000000B 225X DF-MR EQU 07DH 225X UP-NF EQU 07DH 225X UP-NF EQU 07DH 231X UP-NF EQU 07DH 233X UP-NF EQU 07DH 234X UP-NF EQU 07DH 235X UP-NF EQU 07DH 247X XFET H37DEF 245X XFET H37DEF 245X XFET H37DEF 245X XFET EQU 07-NPRT-2 255X PD-NF EQU 0	SELEC
219X DF.NO EQU 00010000B 221X DF.NT EQU 1000000B 222X DF.NT EQU 1000000B 225X DF.NT EQU 1000000B 225X 225X 225X 225X 225X 225X 225X 225	ŀ
221X DF.8T EQU 00100000B 221X DF.8T EQU 1000000B 222X DF.8R EQU 10000000B 222X 224X 224X 226X 226X 226X ** DISK UART PORTS AND CONT 226X UP.5F EQU 07EH 230X UP.5F EQU 07EH 230X UP.5F EQU 07EH 230X UP.5R EQU 07EH 230X UF.8R EQU 07EH 240X	R ON (BOTH DRIVES)
221X DF.ST EQU 1000000B 222X F** EQU 1000000B 223X 224X 226X *** DISK UART PORTS AND CONT 227X 228X UP.DP EQU 07DH 239X UP.ST EQU 07DH 230X UP.ST	CTION (0=DUT)
224X 225X 226X ** DISK UART PORTS AND CONT 227X 228X UP.PP EQU 07CH 229X UP.FC EQU 07DH 230X UP.SC EQU 07EH 231X UP.SC EQU 07EH 233X UP.SC EQU 07EH 233X UF.RD EQU 00000018 235X UF.RD EQU 000000108 235X UF.RD EQU 00000008 235X UF.RD EQU 00000008 235X UF.RD EQU 00000008 235X UF.RD EQU 00EH 240X 241X 242X ** CHARACTER DEFINITIONS. 245X ** CHARACTER DEFINITIONS. 245X ** CHARACTER DEFINITIONS. 245X ** CHARACTER DEFINITIONS. 245X ** CHARACTER DEFINITIONS. 255X PD.STAT EQU DK.PORT+2 255X PD.STAT EQU DK.PORT+2 255X DK.CON EQU DK.PORT+2 255X DK.CON EQU DK.PORT+1 255X K.CON	COMMAND (ACTIVE HIGH) E ENABLE RAM
225X ** DISK UART PORTS AND CONT 227X 226X ** DISK UART PORTS AND CONT 227X UP-5F EQU 07DH 230X UP-5F EQU 07DH 230X UP-5F EQU 07DH 231X UP-5C EQU 07DK-701X UP-5C EQU	
2267 ** DISK UART PORTS AND CONT 228X UP.PP EQU 07DH 239X UP.FC EQU 07BH 233X UP.SC EQU 07BH 234X C.BC EQU 00000108 235X UP.SC EQU 00000108 235X UP.SC EQU 00000108 235X UP.SC EQU DE.PINITIONS. 240X 240X 240X 240X 240X 240X 240X 240X	
227X 228X UP.DP EQU 07CH 229X UP.FC EQU 07BH 239X UP.ST EQU 07EH 231X UP.SC EQU 07EH 233X UP.SC EQU 07EH 233X UF.RDA EQU 0000001B 234X UF.RDA EQU 0000001B 235X UF.RDA EQU 0000010B 235X UF.RDA EQU 0000010B 235X UF.RDA EQU 0000010B 235X UF.RDA EQU 0000010B 235X UF.RDA EQU 0100000B 239X 240X 240X 240X 240X 240X 240X 240X 240X	FLA6S.
229X UP-FC EQU 07DH 231X UP-ST EQU 07DH 233X UP-ST EQU 07DH 233X UP-SR EQU 07EH 233X UP-RDA EQU 00000018 234X UF-RDA EQU 00000108 235X UF-RPE EQU 00000108 235X UF-RPE EQU 00000108 235X UF-RPE EQU 00000108 235X UF-RPE EQU 00000108 239X UF-RPH EQU 10000008 239X UF-RPH EQU 00000008 239X UF-RPH EQU 00000008 239X UF-RPH EQU 00000008 240X 240X 240X 240X 240X 240X 240X 240X	7.000
230 V P.ST EQU 07BH 231 V P.SC EQU 07EH 2332 V P.SR EQU 07EH 2334 V F.RDA EQU 00000018 2354 V F.RDA EQU 00000108 2355 V F.RDA EQU 00000108 2375 V F.RPE EQU 000001008 2375 V F.RPE EQU 000001008 2397 V F.RPE EQU 00000108 240	CHARACTER
231X UP.SC EQU 07EH 233X UP.SR EQU 00000018 234X UF.RDA EQU 000000108 235X UF.RDA EQU 000001008 235X UF.RPE EQU 000001008 237X UF.FFE EQU 010000008 239X 240X 240X 240X 120000008 240X 241X 242X 240X EQU 0FDH 240X 243X 243X EQU 0FDH 240X 243X 243X EQU 0FDH 240X 243X 243X EQU 0FDH 240X 243X EQU 0FDH 240X 243X EQU 0FDH 240X 243X EQU 0FDH 240X 245X EQU 0FPH 255X FD.STAT EQU 0F.PORT+2 255X FD.STAT EQU 0F.PORT+3 255X FD.STAT	US FLAGS
233X 234X UF.RDA EQU 00000018 235X UF.RPE EQU 000001008 235X UF.RPE EQU 000001008 237X UF.FE EQU 010000008 238X UF.TBM EQU 100000008 239X 240X 241X 242X 242X 243X 243X 244X 243X 244X 245 245 245 245 245 246X 247 245 255X FD.RE EQU DK.PDRT+2 245X 255X FD.RE EQU DK.PDRT+2 255X FD.RE EQU DK.PORT+2 255X FD.RE EQU DK.PORT+3	CHARACTER (OUTPUT) RESET (INPUT)
234X UF.RDA EQU 000000018 235X UF.RDE EQU 000001008 237X UF.RPE EQU 010000008 237X UF.TBH EQU 100000008 239X 241X 241X 241X 241X 244X C.DSYN EQU 0FDH 243X 244X C.DSYN EQU 0FDH 245X 248X H H37DEF - H37 DISK CONTRO 247X 248X P H37DEF - H37 DISK CONTRO 247X 248X DK.PGRT EQU DK.PGRT+2 250X FD.STAT EQU DK.PGRT+2 251X FD.CMD EQU DK.PGRT+2 251X FD.CMD EQU DK.PGRT+3 255X FD.CMD EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3	
235X UF,RDR EQU 00000010B 236X UF,RPE EQU 00000100B 238X UF,TBH EQU 1000000B 239X 243X 241X 245X 243X 243X 243X 244X C,DSYN EQU 0FDH 245 245 245 245 245 245 245 245 247 248X DK,PORT EQU DK,PORT+2 250X FD,RK EQU DK,PORT+2 251X FD,CMD EQU DK,PORT+2 255X FD,RK EQU DK,PORT+3 255X FD,RK EQU DK,PORT+3 255X FD,RK EQU DK,PORT+1	IVE DATA AVAILABLE
2337X UF-FCT EQU 01000000B 239X 240X 240X 241X 241X 242X ** CHARACTER DEFINITIONS. 243X 243X 244X C.DSYN EQU 0FDH 247X 246X ** H37DEF - H37 DISK CDNTRO 247X 246X DK.PORT EQU DK.PORT+2 249X 246X DK.PORT EQU DK.PORT+2 251X FD.CMD EQU DK.PORT+2 251X FD.CMD EQU DK.PORT+2 252X FD.CMD EQU DK.PORT+2 253X FD.SEC EQU DK.PORT+2 255X DK.CON EQU DK.PORT+3 255X COMMANDS SENT TO FD.CMD 255X CON ECC EQU DK.PORT+3 255X COMMANDS SENT TO FD.CMD 255X CON ECC ECU DO	IVER DVERRUN IVER PARITY ERROR
238X UF.TBH EQU 100000008 239X 240X 240X 241X 242X ** CHARACTER DEFINITIONS. 243X 244X C.DSYN EQU 0FDH 245X ** H37DEF - H37 DISK CDNTRO 245X ** H37DEF - H37 DISK CDNTRO 245X C.DSYN EQU 0FDH 245X EQU DK.PORT+2 259X FD.CMD EQU DK.PORT+2 251X FD.CMD EQU DK.PORT+2 252X FD.CMD EQU DK.PORT+2 253X FD.CMD EQU DK.PORT+2 255X FD.CMD EQU DK.PORT+2 255X FD.CMD EQU DK.PORT+2 255X DK.CON EQU DK.PORT+2 255X DK.CON EQU DK.PORT+3 255X COMMANDS SENT TO FD.CMD	CHAR TRANSMITTED
249X 240X 241X 242X ** CHARACTER DEFINITIONS. 243X 243X 244X C.DSYN EQU OF DH 246X ** H37DEF - H37 DISK CONTRC 247X 247X 248X DK.PORT EQU DK.PORT+2 250X FD.STAT EQU DK.PORT+2 251X FD.STAT EQU DK.PORT+2 251X FD.STAT EQU DK.PORT+2 251X FD.STAT EQU DK.PORT+2 251X FD.STAT EQU DK.PORT+3 252X FD.NR EQU DK.PORT+3 253X FD.SEC EQU DK.PORT+3 255X DK.CON EQU DK.PORT+3 255X Z.SEX EQUMANDS SENT TO FD.CMD 255X Z.SEX EQUIDOROGO	SMITTER BUFFER EMPTY
242X ** CHARACTER DEFINITIONS. 242X 244X C.DSYN EQU OFDH 245X 245X XTEXT H37DEF 245 XTEXT H37DEF 245X 247X 249X D.STAT EQU DK.PORT+2 250X FD.STAT EQU DK.PORT+2 251X FD.CHD EQU DK.PORT+2 252X FD.TRK EQU DK.PORT+2 252X FD.TRK EQU DK.PORT+3 255X FD.CHD EQU DK.PORT+1	
242X ** CHARACTER DEFINITIONS. 243X 244X C.DSYN EQU OFDH 245 245	
244X C.DSYN EQU OFDH 245 245 245 245 245 245 247X 247X 248X DK.PGRT EQU DK.PGRT+2 250X FD.STAT EQU DK.PGRT+2 251X FD.CHD EQU DK.PGRT+2 252X FD.TRK EQU DK.PGRT+2 252X FD.TRK EQU DK.PGRT+2 252X FD.AR EQU DK.PGRT+2 255X FD.AR EQU DK.PGRT+2 255X FD.AR EQU DK.PGRT+3 255X FD.AR EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X FD.AR EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X DK.LOR EQU DK.PGRT+3 255X BK.LOR EQU DK.PGRT+1 256X DK.ART EQU DK.PGRT+1 255X BK.ART EQU DK.PGRT+1 256X BK.ART EQU DK.PGRT+1 256X BK.ART EQU DK.PGRT+1	
245 ** XTEXT H37DEF  246X ** H37DEF - H37 DISK CONTRC  247X	IX SYNC CHARACTER
247X 248X DK.PGRT EQU 170Q BASE UAR 249X 259X FD.STAT EQU DK.PGRT+2 251X FD.CMD EQU DK.PGRT+2 252X FD.CMD EQU DK.PGRT+3 253X FD.SEC EQU DK.PGRT+3 255X FD.AST EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X DK.CON EQU DK.PGRT+3 255X CGMMANDS SENT TG FD.CMD 259X 260X FDC.RST EQU DG000000B	NE H37 PARAMETERS Definitions
249X 250X FD.STAT EQU DK.PORT+2 251X FD.CMD EQU DK.PORT+2 251X FD.CMD EQU DK.PORT+3 253X FD.SEC EQU DK.PORT+3 253X FD.SEC EQU DK.PORT+3 255X DK.CON EQU DK.PORT+3 255X DK.CON EQU DK.PORT+3 255X DK.CON EQU DK.PORT+1 255X DK.CON EQU DK.PORT+1 255X COMMANDS SENT TO FD.CMD 259X 260X FDC.RST EQU DO000000B	). O
250X FD.STAT EQU DK.PDRT+2 251X FD.CMD EQU DK.PDRT+2 252X FD.CMD EQU DK.PDRT+3 253X FD.SEC EQU DK.PDRT+3 255X D.SEC EQU DK.PDRT+3 255X DK.CDN EQU DK.PDRT+3 255X DK.CDN EQU DK.PDRT+3 255X DK.CDN EQU DK.PDRT+3 255X X.** COMMANDS SENT TO FD.CMD 259X 259X EV.ST EQU 00000000B	
251X FD.CMD EQU DK.PORT+2 252X FD.TRK EQU DK.PORT+3 255X FD.SEC EQU DK.PORT+2 254X FD.DAT EQU DK.PORT+2 255X DK.COM EQU DK.PORT+2 255X DK.INT EQU DK.PORT+1 255X X.COM EQU DK.PORT+1 255X DK.INT EQU DK.PORT+1 255X COMMANDS SENT TO FD.CMD 259X 260X FDC.RST EQU DO000000B	US PORT
255X FD. SEC EQU DK.PDRT+2 255X PD.DAT EQU DK.PDRT+3 255X DK.CON EQU DK.PDRT+3 255X DK.CON EQU DK.PDRT 255X X. COMMANDS SENT TO FD.CMD 259X ** COMMANDS SENT TO FD.CMD 259X COMMANDS SENT TO FD.CMD 259X COMMANDS SENT TO FD.CMD	A NORT
254X FD. DAT EQU DK. PORT+3 255X DK. CON EQU DK. PORT+1 256X DK. INT EQU DK. PORT+1 257X 257X 258X ** COMMANDS SENT TO FD. CMD 259X 260X FDC. RST EQU 00000000B	OR REGISTER
255X DK.CON EQU DK.PORT 256X DK.INT EQU DK.PORT+1 257X 257X 258X ** COMMANDS SENT TO FD.CMD 259X 260X FDC.RST EQU 00000000B	PORT
257X COMMANDS SENT TO FD.CMD 259X ** COMMANDS SENT TO FD.CMD 259X EDC.8EY EQU 00000000B	ROL PORT
258X ** COMMANDS SENT TO FD.CMD 259X 259X 260X FDC.RST EQU 0000000008	AFAVE CONTRUL
259X 260X FDC.8XT EQU 000000008	
3717 EDG 8EK EDH 00010008	ORE
	SEEK TRACK IN FO.TRK

EQUATES FOR MTR88			H17 10:40:30 17-FEB-82
000*000	FDC.STP	00100008	STEP IN SAME DIR AS LAST
000.100 000.140	263X FDC.STI EQU 264X FDC.STO EQU	01000000B 01100000B	STEP IN STEP OUT
000• 200	265X 266X FDC.RDS EQU	100000008	READ SECTOR
000.240	FOC.WTS	101000008	MRITE SECTOR
000.300 000.340	269X FDC.RDA EQU 270X FDC.RDT EQU	110000008 111000008	KEAD ADDRESS READ TRACK
000.360	271X FOC.MIT EUU	111100008	WRITE TRACK
000.320	273X FDC.FI EQU 274X	110100008	FORCE INTERRUPT
en e	275X ** OPTIONS 276X	FOR FOC. RST	THRU FDC.STO
000,020	277X FDF.UTR EQU	000100008	UPDATE TRACK REGISTER
400.000	FDF.VRF	000001008	CUAD DESTINATION
000,000		00000000	9 :
000.002	FDF . S20	000000108	STEP 20 MS
	**	ENP ENC. PAG	
000 000	107 101		
000-010	289X EDE STE EQU	0001000	MULIY KELUKO PLAG GETTO : EMITH SUIST SIGHT
000.004	FDF.DLF	000001008	15 (30) MS DELAY
000,002 000,001	291X FDF.5S1 EQU 292X FDF.DDM EQU	000000108	SELECT SIDE 1
	293X 294X ** STATUS	S BIT DEFINITIONS	
000.200	FDS.NRD	100000008	NOT READY
000.100	297X FDS.HPV EQU	01000008	KRITE PROTECT
000,040	1	00100008	REAU 13 LUAUEU RECORD TYPE
000 • 040	FDS.MTF	00100008	HRITE FAULT
000.020	301X FDS.SEK EQU	000100008	SEEK ERROR
000.010	FDS.CRC	000010000	•
000.000	FDS.TKO	000000000	OVER TRACK ZERO
000.004	FDS.LDT	000001008	LOST DATA
000 000	FDS. IND	000000108	INDEXZ PULSE
000,000	308X FDS.BSY EQU	00000000	UALA REGUEST BUSY
	* 811S	SET IN DK.CON	
000*001	311X 312X CON.EI EQU	000000018	1 X X X T T X T T X T T X T T X T T X T T X T T X T T X X T X
000,002	CON. DRO	000000108	ENABLE DRQ INTERRUPT
000-004	314X CON. NO EQU	000001000	SET AFFA RECORDING
000.020	CON. DSO	0001000	ALL MULUKS UN ORIVE O
4.0			

			ZH.	10:40:31 17-FEB-82	
000•100	316X CON. DS2	u u	010000008	1 1	
000.200	319X CON.DS3 320X	0.03	10000008	DRIVE 3	
	321X 322X *	Bits set	it to select alternate	registers	
000-000		EQU	00000000	SELECT COMMAND/DATA	
000.001 000.000	325X CON.ST 326	EQU	000000018 2470EF DEFINE	SELECT SECTOR/TRACK INE 247 EQUATES	
	328X ** 329X *	H47DEF	- H47 Constan	Constant Definitions	
	331X #	780 Ins	780 Instructions		
				# T ( )	
242.355	333X M.INI 334X M.OUTI	EQU EQU	101000108*256+111011018 101000118*256+111011018	1018 INI Instruction 1018 OUTI Instructions	
000-170	338X 339X D.STA	EQU	1709	INTERFACE STATUS PORT	
000.171	340X D.DAT	EQU	0.STA+1	INTERFACE DATA PURI	
000.001	342X S.ERR	EQU	00000018	ERROR BIT	
000 • 040		Eau	00100008	DONE	
000-100	344X S.IEN	E00.	100000008	INIEKKUPI ENABLE Data transfer request	
000.000		3 3	20000000	O HOTTEN ATO	
000.002	347X S.SWU	2	COCCOLOGE	TATION OF THE PARTY OF THE PART	
000-004		300	000010008	DIP SHITCH 2	
000.020	350X S.SH3	EOU	00010000	DIP SWITCH 3	
	351X	1103	000000108	RESET COMMAND	
000.002		3			
	354X **	STATUS	BYTE FLAGS		
	355X * 356X				ign - general and the second assessment of the second and the second assessment of the second as
000,200	357X SB.UNR	1	10000008 010000008	UNIT NOT READY WRITE PROTECTED DRIVE	
000.040	359X S8.DLD	1	00100008	DELETED DATA	
000.020	360X SB.NRF	3	0001000	CAC FRACE	
000.010	72.2		a COTOON		

ESCALES FOR HINGO				70-40:32 71-120-07	
000.004	362X SB.LTD	EQU	000001008	LATE DATA	
000.001	364X SB.BTD	E00	00000018	ILLEGAL COMMAND BAD TRACK OVERFLOW	
	366X ** 367X *	AUXILLA	AUXILLARY STATUS BYTE FLAGS		
000.100		EQU	010000008		
000, 040 000, 020 000, 003	370X AS.10D 371X AS.S1A 372X AS.SLM	E GO	001000008 000100008 000000118		
	1	DISK CO	COMMANDS		
-	375X * 376X				
000.000	377X 378X 00.8001	ORG DS	0 1	8.00.7	
000, 001		So			
000-003	SAUX DUCKAS	Sa	-	READ AUX. STATUS	
000.000		s o	<b>~</b>	LUAD SECTUR COUNT READ ADDR. DF LAST SECTOR ACCESSED	
000.005		05			
000 000	385X DD.REAB	DS	<u> </u>	RELIE SECTURS READ SECTURS BUFFERED	
000.000	386X DD.WRIB	DS	1	WRITE SECTORS BUFFERED	
000.011 000.012	387X DD. WRD	SO So		ł	
0000.013	1	05			
000.014		DS	1	AT IBM	
000.015 000.016	391X 00.FRM1 392X 00.FRM2	SOS		FORMAT TOM DO	
0000.017	1	0S		_1	
	1 1		***************************************	KEAU KEAU!	
	396X ## 397X #	Special	De-Bug functions		
000.020		ORG	010н		
000.020	DD.SPFO	SO			
170 000	AULX DUSSPFI	200		SPECIAL FUNCTION 1	
000.022	00.SPF3	s a	<b>-</b>	FUNCTION	
000.024	00.SPF4	0.5	-	SPECIAL FUNCTION 4	
000.025	DO.SPF5	DS	· ·	FUNCTION	

1000-200   1000-200	EQUATES FOR MTR88				35 24 - 14 - 50-27-24
4008	THE PROPERTY OF THE PROPERTY O	1	Specia	Heath	SU
411X DD. SDC 08 08 0H 411X DD. SDC 08 1 413X DD. SD 1 413X DD. WILL DS 1 414X DD. WILL DS		#			
11	00.200		OKG	H080	
413X DD.50 S S 1  414X DD.50 S 1  415X DD.50 S	00.200	00.500	05	<b></b>	SET DRIVE CHARACTERISTIC
414X D0.8 BL D5 1 416X D0.8 BL D5 1 426X UNT.0 EQU 00000000 B 424X UNT.0 EQU 00000000 B 426X UNT.0 EQU 00000000 B 437X UNT.0 EQU 00000000 B 437X UNT.0 EQU 00000000 B 437X UNT.0 EQU 00001111B 436X SID.0 EQU 00001111B 446X X C.2 SE EQU 256 446X X C.2 SE EQU 256 446X X C.2 SE EQU 256 446X X C.2 SE EQU 26 446X X C.2 SE EQU	102.00	00.00	Sé	- F	DICK STATIS
415X 00-WTC DS 1 417X 00-WTC DS 1 417X 00-WTC DS 1 419X 00-WTC DS 1 422X # 423X 422X WT.1 EQU 000000008 422X WT.1 EQU 010000008 423X GD.1 EQU 100000008 423X GD.1 EQU 100000008 431X GD.1 EQU 100000008 431X GD.1 EQU 100000008 431X GD.1 EQU 100000008 431X GD.1 EQU 100000008 443X GD.1 EQU 100000008 444X GC.256 EQU 256 445X GC.256 EQU 256	203 203	00.00	20	*	TO STATE OF THE ST
416X 00*R0BL 05 1 418X 00*NTBL 05 1 42X 42X * 422X 1NT*0 EdU 00000000B 424X UNT*0 EdU 01000000B 425X UNT*1 EQU 01100000B 425X UNT*1 EQU 01100000B 425X UNT*3 EQU 01100000B 425X UNT*3 EQU 01000000B 425X UNT*3 EQU 01000000B 431X 431X 42X 433X 443X 443X 444X 5512*M EQU 1024 444X 5512*M EQU 1024 445X 445X 445X 445X 445X 445X 445X 445	00.204	00.WTL	SO	4	WRITE LOGICAL
417X DD.4TBL DS 1 419X DD.4TBL DS 1 419X DD.4TBL DS 1 421X ** USFFUL FLAGS 422X ** 423X 423X UNT.0 EQU 000000008 423X UNT.2 EQU 01000008 425X UNT.2 EQU 01000008 425X UNT.2 EQU 01000008 425X UNT.2 EQU 01000008 425X UNT.3 EQU 01000008 425X UNT.4 EQU 01000008 425X UNT.6 EQU 01000008 425X UNT.7 EQU 01000008 425X UNT.8 EQU 01000008 425X UNT.8 EQU 01000008 425X UNT.8 EQU 000111118 425X UNT.8 EQU 10000008 433X SID.0 EQU 000111118 433X SID.0 EQU 10000008 434X SID.1 EQU 10000008 435X 446X EQU 256 446X E	00.205	DO.ROBL	05		READ BUFFERED LOGICAL
418X DD. WTOL DS 1 419X DD. WDLB DS 1 421X ** USFUL FLAGS 422X * 423X 423X 423X 423X 423X UNI.2 EQU 00100000B 425X UNI.2 EQU 01100000B 425X UNI.2 EQU 01100000B 425X UNI.3 EQU 01100000B 425X UNI.4 EQU 01100000B 425X UNI.4 EQU 01100000B 425X UNI.4 EQU 01100000B 425X UNI.4 EQU 01000000B 423X SID.0 EQU 0000000B 433X SID.1 EQU 01000000B 433X SID.1 EQU 01000000B 433X SID.1 EQU 01000000B 433X SID.1 EQU 00001111B 441X 453X 445X 446X SEC.M EQU 1024 444X SSIZ.M EQU 126 446X 465X 465X 465X 465X 465X 465X 465X 465X	00.206	417X DD.HTBL	DS		WRITE BUFFERED LOGICAL
421X ** USEFUL FLAGS 422X ** UNIT 0 422X UNIT 0 423X UNIT 0 623	00.207 00.210	418X DD.MTOL 419X DD.WDLB	0S 0S	<b>~</b>	MRITE DELETED DATA LOGICAL Write Buffered Deleted Data Logical
421X ** USEFUL FLAGS 422	Manufathan and a chairm and a share of the second s				
422X # 423X UNI.0 EQU 00000008 UNIT 1 425X UNI.2 EQU 01000008 UNIT 1 425X UNI.2 EQU 01000008 UNIT 1 426X UNI.2 EQU 011000008 UNIT 3 428X UNI.3 EQU 011000008 UNIT 3 428X UNI.3 EQU 011000008 UNIT 3 428X UNI.3 EQU 011000008 SIde: 0 431X 432X UNI.4 EQU 00000008 SIde: 0 434X SID.1 EQU 10000008 SIde: 0 434X SID.1 EQU 10000008 SIde: 0 435X 444X SSIZ.4 EQU 000111118 Track Mask 441X 442X 445X 445X 445X 445X 445X 445X 445		- 1	USEFUL	FLAGS	
423X UNT.0 EQU 00000008 UNIT 1 425X UNIT.0 425X UNIT.1 EQU 001000008 UNIT 2 426X UNIT.2 EQU 010000008 UNIT 2 426X UNIT.3 EQU 010000008 UNIT 3 428X 428X 430X 431X 510.0 EQU 000000008 Side: 0 434X 510.1 EQU 100000008 Side: 0 436X 440X 5EC.M EQU 000111118 Track Mask 441X 442X 442X 443X 444X 5512.4 EQU 256 EQU 256 445X 445X 445X 445X 445X 445X 445X 44		- 1			жения долго пользования выполня выполн В пользования выполня в
425X UNT.1 EQU 00100008 UNIT 1 2 426X UNT.2 EQU 01000008 UNIT 2 428X 428X 428X 428X 428X 430X 431X 432X 431X 432X 431X 432X 432X 431X 433X 510.0 EQU 00000008 51de: 0 434X 510.1 EQU 100000008 51de: 0 51de: 1 435X 440X 5EC.M EQU 100000008 51de: 0 51de: 1 440X 5512.M EQU 1024 Maximum Sector 444X 5512.M EQU 124 Maximum Sector 445X 446X 5512.M EQU 124 SECTOR 512E = 449X 40.2 EQU 128 SECTOR 512E = 540X 40.2 EQU 12	000	2	200	80000000	
426X UNIT 2 EQU 01000008 UNIT 2 428X UNIT 3 428X UNIT 3 600 01000008 UNIT 3 428X UNIT 429X UNIT 8 EQU 010000008 UNIT 3 430X 430X 433X 51D.0 EQU 000000008 SIde: 1 434X 51D.1 EQU 100000008 SIde: 1 536 51D.1 EQU 100000000 SIDE: 1 536 51D.1 EQU 1000000000 SIDE: 1 536 51D.1 EQU 1000000000 SIDE: 1 536 51D.1 EQU 100000000 SIDE: 1 536 51D.1 EQU 1000000000000 SIDE: 1 536 51D.1 EQU 1000000	000.000		E01	0000000	,
427X UNIT 3 EQU 01100008 UNIT 3 428X 428X 430X 431X 431X 432X 431X 433X SID.0 EQU 00000008 SIde: 0 434X SID.1 EQU 10000008 Side: 1 435X 434X SID.4 EQU 10000008 Side: 1 435X 440X SEC.M EQU 10000008 Side: 1 440X SEC.M EQU 100011118 Track Mask 441X 442X 444X SSIZ.M EQU 256 446X SSIZ.M EQU 256 446X 452 EQU 256 446X 465 EQU 266 446X	00.100		EQU	01000008	
428X       428X       Unit mask         430X       431X       431X         431X       431X         431X       431X         433X       51D.0       60U       00000000B       Side: 0         434X       51D.1       60U       10000000B       Side: 1         435X       435X       51D.0       60U       1000000B       Side: 1         435X       435X       60U       1000011111B       Track Hask         443X       441X       60U       1024       Haximum Sector         445X       445X       445X       56       56CTOR SIZE         446X       445X       445X       56       56CTOR SIZE         446X       445X       445X       61U       26         446X       445X       445X       445X       61U       26         446X       445X       445X       445X       61U       26         446X       445X       445X       445X       445X	00.140		Eau	011000008	L
430X 431X 431X 432X 51D*0	071 00		1103	01100008	
431X 432X 432X 433X SID.0 EQU 0000000B Side: 1 435X SID.0 EQU 10000000B Side: 1 435X 435X 437X 4437X 440X SEC.M EQU 00011111B Track Mask 440X SSIZ.M EQU 1024 Maximum Sector 441X 444X 443X 445X 445X 445X 445X 445X 445X 445X 445X 445X 445X 446X 447X 46.256 EQU 256 447X 46X 46.128 EQU 128 446X 46X 6.2128 EQU 256 447X 46X 46X 6.256 EQU 256 446X 46X 6.2128 EQU 256 447X 46X 46X 6.256 EQU 256 446X 46X 6.2128 EQU 256 446X 46X 46X 6.256 EQU 256 446X 46X 6.2128 EQU 256 446X 6.2128 EQU 256 44			) :		
433 SID*0 EQU 0000000B SIde: 0 434X SID*1 EQU 1000000B SIde: 1 435X 435X 435X 435X 435X 435X 435X 435X 435X	de de de de marie en constant de servicio	431X		AND THE STREET,	
434X SID.1 EUU 1000000B Side: 1 435X 435X 436X 437X 438X 449X 440X SEC.M EQU 00011111B Track Mask 441X 442X 444X 444X 445X 445X 446X 446X 446X 446	000.000	1	EOU	00000000	
435X 436X SID.M EQU 1000000B Side Mask 437X 438X 438X 449X 440X SEC.M EQU 00011111B Track Mask 441X 442X 4442X 4442X 4444 SSIZ.M EQU 1024 Maximum Sector 445X 446X 446X 446X 446X 446X 446X 446X	00.200	- 1	EOU	100000008	- 1
437X 438X 439X 440X SEC.M EQU 00011111B Track Mask 441X 442X 442X 443X 444X 445X 446X 460X	00-200		Eou	100000008	
439X 440X SEC.M EQU 00011111B Track Mask 441X 442X 443X 4445X 450		1			
440X SEC.M EQU 00011111B Track Mask 441X 442X 443X 443X 4443X 4445X 445X 445X 445X 4	Come in speciment with the interest between the contract of th	438X	. The second sec	and the second s	
441X 442X 443X 444X SSIZ*H EQU 1024 Haximum Sector 445X 446X 446X 446X 446X 446X 446X 446X 446X 446X 446X 446X 446X 447X #C.256 EQU 256 449X #C.128 EQU 128 449X #C.26 EQU 26 449X #C.26 EQU 26 449X #C.26 EQU 26 449X #C.26 EQU 26	00.037		Eau	000111118	Track Mask
443X 444X SSIZ.M EQU 1024 Maximum Sector 445X 445X #C.256 EQU 256 SECTOR SIZE # 449X #C.128 EQU 128 SECTOR SIZE # 449X #C.26 EQU 26 449X #C.26 EQU 26 450 XTEXT H67DEF H67 DEFINITIONS		441X 442X			
445X 445X 446X 445X 446X 445X 446X 447 4C,256 EQU 256 8ECTOR SIZE 448X 4C,128 EQU 26 8ECTOR SIZE 449X 4C,26 EQU 26 450 XTEXT H67DEF H67 DEFINITIONS			100	A C C	Exclana Capes Class
446X +C.256 EQU 256 SECTOR SIZE = 447X +C.256 EQU 256 SECTOR SIZE   448X +C.128 EQU 2.6   449X +C.26 EQU 2.6   450   XTEXT H67DEF   H67 DEFINITIONS   450   XTEXT H67DEF   H67 DEFINITIONS	04.000	7776	2	1704	0417 TO4507 E381401
447X *C.256 EQU 256 SECTOR SIZE # 448X *C.128 EQU 128 449X *C.26 EQU 26 4450 XTEXT H670EF H67 DEFINITIONS	e se de la company de la compa			The state of the s	
449X *C.26 EQU 26 450 XTEXT H67DEF H67 DEFINITION			003	256 128	SIZE **
450 XTEXT H67DEF	A SA CALLERY OF THE PROPERTY O		EQU	26	
	00.211	450	XTEXT	H670EF	HOT UEFINITIONS
	The second state of the se				
		A CONTRACTOR OF THE PROPERTY O	Andrews and the second	Miryala aldığın döğün adırısını çışışı.	

	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NA				
	453X **	0 29H	Disk Controller	Definitions	
	4 24X *				
	426X ##	Register	ter addresses		- Andrews -
			1		over i sa sustain ampara marpa de marcer e l'ever es que que est de la demander.
000.170		EOU	1704	Controller base address	
000,000	461X RI.DAT	EQU	0	Control (Mrite Doly)	
000.001		EQU		Bus Status (Read Only)	
	465X #	Control	of Register Definition	nition	
000.100	466X 467X BC.SEL	Eau	010000008	Select and data bit 0	
000.040	468X BC.IE	EOU	00100008	nable	ermente un annomorphic igina entité es embre pereterienve production en experience des entre en entre entre en
000-020		200	000100008	Keset	
	472X *	Bus St	Status Register F	Definition	
	ı				
000.200	- 1	EQU	100000008	Transfer	
000,100	475X 85.0TD 476X 85.1N	E 9U	000000000000000000000000000000000000000	Data Transfer Direction	
000,100		EOU	010000008	1	Andre de santante de la companya de
000°040		E00	00100008	Last byte in data/command string	
000.000			00000000	Message type Data	
000.020	481X BS.COM	E00	000100008	Costand	
000.000		EQU	000001008	Interrupt Pending	
000,002	484X BS.PE	EQU	000000108	Parity Error	
100.000		EGO	00000018	Hardware Identification	
	487X *	Status	Byte Definitions	NS	
000.140		EQU	011	j	
000.034	i	EGU	000111000	Spare	
000.002		EOU	000000108	Error	
000.001	492X ST.PER	ECC	000000018	Parity Error	

495X #   4	494X ## COMMAND Class Happer	H67 Disk Controller Definitions	11.1005			
497X TASSM EQU 11100000B Class May CLASS EQU 0000000B Class 10 500X CLASS EQU 1100000B Class 10 500X CLASS EQU CLASS EQU 1100000B Class 10 500X CLASS EQU CLASS EQU 1100000B CLASS EQU EQU CLASS EQU CLASS EQU EQU 1100000B CLASS EQU	495X * 495X CLASSN EOU 111000008 Class No 496X CLASSN EOU 00000008 Class O 500X CLASS EOU 001000008 Class O 500X CLASS EOU 01000008 Class O 500X CLASS EOU 011000008 Class O 500X CLASS EOU 011000008 Class O 500X CLASS EOU 011000008 Class O 500X CLASS EOU CLASSO+O Foreat D 500X LUMR EOU 01101111B LOGICAL FOR EOU CLASSO+O Foreat D 510X D.FEC EOU CLASSO+O Foreat D 510X D.FEC EOU CLASSO+O Foreat D 510X D.FES EOU CLASSO+O Write D 510X D.FES EOU CLASSO+O Foreat D 510X D.FES EOU CLASSO+O Write D 510X D.FES EOU CLASSO+O Write D 510X D.FES EOU CLASSO+O FOREAT D 510X D.F			Comman	25	
499X CLASSH EQU 11100000B Class Na 499X CLASSO EQU 0000000B Class 0 500X CLASS1 EQU 0010000B Class 0 500X CLASS EQU 1100000B Class 0 502X DCDDH EQU 00110111B Dp-Code 503X DCDDH EQU 01100000B Class 0 503X LSA.2 EQU CLASSO+0 Test dri 503X LSA.2 EQU CLASSO+1 Request 513X D.REC EQU CLASSO+0 Format 151X D.RS EQU CLASSO+0 Format 151X D.RS EQU CLASSO+0 Format 151X D.RE EQU CLASSO+1 Section 151X D.RE EQU CLASSO+1 Section 151X D.RE EQU CLASSO+1 Section 151X D.RE EQU CLASSO+0 Format 151X D.RE EQU CLASSO+1 Section 151X D.RE EQU CLASSO+0 Format 151X D.RE EQU CLASSO+0 F	499X CLASSH EQU 11100000B Class Na 499X CLASSO EQU 000000B Class 0 500X CLASSO EQU 000000B Class 0 502X CLASSO EQU 1100000B Class 0 502X CLASSO EQU 0110000B Class 0 502X CLASS EQU 010000B CLASSO EQU 01000B CLASSO EQU 010000B CLASSO EQU 01000B CLASSO EQU 010000B CLASSO EQU 01000B CLASSO EQU	And the same of the same to the same to the same of th	1	- Longitudina (miles de la companya		
SON CLASS   EQU   00000000   Class 0	500X CLASSO EQU 00000000000000000000000000000000000	0,340	i	EQU	111000008	Class Mask
SOTX CLASS6	501X CLASS6 EQU 110000008 Class 6 502X 502X 502X 502X 502X 502X 503X GLASS 600 503X GLASS 6000 503X LSA 2 EQU 000111118 L0gical 504X LUNH EQU 011000008 L0gical 504X LUNH EQU 014SS0+3 Request 510X D_REC EQU CLASS0+3 Request 511X D_RES EQU CLASS0+4 Request 511X D_RES EQU CLASS0+4 Format 1 512X D_RES EQU CLASS0+6 Format 1 513X D_FER EQU CLASS0+6 Format 1 513X D_FER EQU CLASS0+6 Format 1 513X D_FER EQU CLASS0+6 Format 1 513X D_RES EQU CLASS0+6 Format 1 52X D_RES EQU CLASS0+1 Hrite PR 52X # Class 6 Commands	0,000		E00	00000008	i
503X	SO3X	0.300		EQU	110000008	Class 6
504X LUMM	504X LUNH         EQU         01100000B         Logical           507X *         Class O Commands         Logical           507X *         Class O Commands         Featibr           507X *         Class O Commands         Recalibr           508X D.TDR EQU         CLASSO+2         Request           510X D.REE         EQU         CLASSO+3         Request           512X D.REE         EQU         CLASSO+4         Readlbr           512X D.REE         EQU         CLASSO+9         Format D           513X D.FT         EQU         CLASSO+9         Format D           515X D.FT         EQU         CLASSO+9         Format D           515X D.FT         EQU         CLASSO+9         Format D           515X D.FB         EQU         CLASSO+9         Format D           515X D.FB         EQU         CLASSO+9         Format D           515X D.FB         EQU         CLASSO+9         Format D           520X D.FB         EQU         CLASSO+1         Format D           522X T.         EQU         CLASSO+0         Format D           522X T.         EQU         CLASSO+0         Format D           528X D.FFD         EQU         CLASSO+0	0.037	- 1	003	000111118	Up-code Mask
507x	507X * Class 0 Commands 508X 508X 508X 509X D.TDR	5.037		EOU	011000008	Logical Unit Mask Logical Sector Address (2)
508X	508X		1	Class (		
510X 0.REC   EQU	510		۱ ۹	6011	0+055410	
Size Description   Size Description   Size Description	512X D.RSY	0000		FOU	CL AS S0+1	Recalibrate drive
512X D.RSE	512X D.RSE EQU CLASSO+3 Request Sense 513X D.FOR EQU CLASSO+6 515X D.FOF EQU CLASSO+5 515X D.FOF EQU CLASSO+5 515X D.FOF EQU CLASSO+6 515X D.FOF EQU CLASSO+6 515X D.FOF EQU CLASSO+7 515X D.FOF EQU CLASSO+9 519X D.WR EQU CLASSO+9 519X D.WR EQU CLASSO+10 619X D.WR EQU CLASSO+11 520X D.FOF EQU CLASSO+11 520X D.FFD EQU CLASSO+10 520X T. Class 1 Commands 520X T. Class 1 Commands 520X T. Class 6 Commands 520X T. Class 7 Commands 520X T. Class 6 Commands 520X T. Class 7 Commands 520X T. Class 6 Commands 520X T. Class 7 Commands 520X T. Class 6 Commands	2007		200	CLASS0+2	Request Syndrome
513X D.FOR EQU CLASSO+4 FORMAL TIVE 514X D.FT EQU CLASSO+5 FORMAL TRACK 515X D.FT EQU CLASSO+6 FORMAL TRACK 515X D.FT EQU CLASSO+8 FORMAL TRACK 513X D.MES EQU CLASSO+8 Mrite protect the 513X D.MES EQU CLASSO+9 Mrite protect the 513X D.MES EQU CLASSO+10 Mrite 520X D.SEK EQU CLASSO+11 Seek 523X + Class 1 Commands 524X D.CPB EQU CLASSO+11 Seek 524X D.CPB EQU CLASSO+11 Seek 524X D.CPB EQU CLASSO+0 Format floppy disk 526X + Class 6 Commands 528X D.FFD EQU CLASSO+0 Format floppy disk	513X D-FOR EQU CLASSO+4 Format Drive 514X D-CTF EQU CLASSO+5 Format Track 515X D-FT EQU CLASSO+6 Format Track 515X D-FB EQU CLASSO+8 Format Dad sector 518X D-MPS EQU CLASSO+8 Write protect the 519X D-MPS EQU CLASSO+9 Write protect the 519X D-MPS EQU CLASSO+1 Soek 519X D-MPS EQU CLASSO+1 Soek 520X D-SER EQU CLASSO+1 Soek 520X D-SER EQU CLASSO+1 Soek 520X D-SER EQU CLASSI+0 COPY block 520X Class 1 Commands 520X + Class 6 Commands 520X - Class 6 Commands 520X + Class 6 Commands 520X + Class 6 Commands	2.003	512X D.RSE	600	CLASS0+3	Request Sense
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040.110		D.CON	0.5	16	DISK CONSTANTS
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040.240	577X D.RAM		31	
040.277	578X S.VAL	1 0S	36	SYSTEM VALUES
040.545			16	
41.146	581X S.SOVR	VR DS	2	STACK OVERFLOW WARNING
041.150	1		42200A-*	SYSTEM STACK
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040.356	637X S.RFHA		2	RE	)OS CODE
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		7			
040.360	641X S.00LDA	0 A 0 S	2	DRIVER LOAD ADDR	ADDRESS (HIGH BYTE=0 IF NO LOAD PENDING) IN BYTES
040 364		20 00	-	COULT LENGTH AND STAFE	2 DRIVER
040,365			4 <b>-</b> 4	HOLD PLACE	
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000.200	- 1		100000008	USER CODE SWAPPED FOR	ED FOR OVERLAY
040.371	13 X 757 X 2 5 7 7 7 1 E 1	30 1:	-	DVFRLAY FLAG	
040-372	1		2	FWA SWAPPED USER CODE	2 CODE
340.374	658X S.UCSL	SO.	2	LENGTH SWAPPED USER CODE	USER CODE
040,376			2	SIZE OF OVERLAY	CODE
041.000		- 1	2	POINT OF	OVERLAY CODE
041.002		00	~	SWAP AREA SECTOR	NUMBER .
041.004	663X S.05N	0.5	2	OVERLAY SECTOR NUMBER	LUABER
	* X599	SYSCALL	PROCESSING	WORK AREAS	
041.006	667X S.CAC	SO S	7	(ACC) UPON SYSCALL	A.L.
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041.024			3	2	SCI (STORE CHANNEL INFO)
041.027			3		(GET UNIT POINTER)
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041.032	NOUN S YOUR	200			1
641.033	682X 682X		•		
041.034	683X S.BOOTF	TF DS		BOOT FLAGS	

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H67 Disk Controller Definitions				ESINT 10:40:56 17-FEB-82	
000,001	BOOT.P	nο	000000018	EXECUTE PROLOGUE UPON BOOTUP	/2.15/
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· v reservich debester met de springen en e	· 11- +	FROM V	ARIOUS SYSTEM	PROMITTED SYSTEM TABLES VIA POINTER REGISTERS. SINCE THE PAGE HAS NO GOOD INDEXED ADDRESSING, THE DATA IS MANUALLY	
	. * *	COP IED BACKDA	COPIED INTO THE AIO.)	AIO.XXX CELLS BEFORE PROCESSING, AND PROCESSING.	
	704X	00	3	JUNP INSTRUCTION	
041.040	A10.00A	EOU	*-2	DEVICE DRIVER ADDRESS	
041.043	707X AID. FLG	05	2	ADDRESS OF GROUP RESERV TABLE	
041.044	AID.SPG	0.5	1	SECTORS PER GROUP	the second se
041.047	1	05 05	<b>,</b> 1 ,2	CURRENT SECTOR INDEX	A MARIE AND THE REPORT OF THE PROPERTY AND THE PROPERTY A
041.051	AIO.LGN	0.5	7	LAST GROUP NUMBER	
041.052	A10.LSI		T	CASI SECTOR ANDER	
041.053	AIO.DIA AIO.DES	s o	2 2	DIRECTORY SECTOR	
041.057	AIO.DEV		2,	DEVICE CODE	
041.061	717X AIU.UNI 718X	co Co			
041.062	719X AIO.DIR	0.5	DIRELEN	DIRECTORY ENTRY	
0.61 111	A I D. CNT	0.5	-	SECTOR COUNT	
041.112	722X AIO.EOM	SO	-4 -	END OF MEDIA FLAG	
041,113	AIO.EUF	So		TEAD FILE POLNIERS	
041.114 041.116	AID.CHA	0.5	7	ADDRESS OF CHANNEL BLOCK (IOC.DDA)	
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041.120	727X S.BDA 728X S.SCR	0S 0S	1 2		
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70-42-17 IN:AT:AT	MISCELLANEOUS EQUATES FOR H17 BOOT ROM	FROM HIT BOOT ROM.	NUKE ANTUKNALIUN VESAKEV	WAIT FOR HOLE ROUTINE ENTRY POINT	WAIT FOR NO HOLE ROUTINE ENTRY POINT	NUMBER OF RAM TO CLEAR	CAT CLEAR START LOCATION	DATA KUULLAR	LERO RAM ROUTINE	JSER INTERRUPT VECTOR	ZIZ TIMER INTERRUPT HANDLER LUCATION RESET 217 ROUTINE LOCATION	LEAD 217 ROUTINE LOCATION	SET DEVICE PARAMETER RAM LOCATION	SEEK DESIRED TRACK TARGET TRACK BYTE	SET DEVICE PARAMETER ENTRY	EL/KET CUCATION		DEFINE 8251 USART BITS		•											
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no / Disk concroiler Delinicion	041.133		de anti-material estamant alle placement in producement in producer because and construction of the state of	036.235	036.271	000.130	037.132	000,037	031.212	040.037	034.031	034.077	040.206	040.166	036.073	034.027	040.264	041.133				And the second s		and an appropriate the second		And the same of the first of th	To be the second description of the second d				1 1 - gelden Berlinder – verser verserken fan de personner verser fan de beske kender kender kender kender

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And the state of t	763X *			
	765X ## 766X	PORT A	PORT ADDRESSES	
000.000	767X UDR 768X USR	EQU EQU	0 1	DATA REGISTER IS EVEN STATUS REGISTER IS NEXT
000.372	769X 770X SC.UART	EQU	3720	CONSOLE USART ADDRESS (IFF 8251)
	t			
	773X **	NODE I	MODE INSTRUCTION CONTROL	BITS.
000.100	775X UMI.18	FOU	010000008	1 STOP BIT 1 1/2 STOP BITS
000.300	1	0.00	110000008	STOP
000.040	779X UMI.PA	E00	0001000	USE PARITY
000.000		EQU	000000000	5 BIT CHARACTERS
000.004	781X UMI.L6	E0.0	000001008	6 BIT CHAKACIEKS 7 BIT CHAKACIERS
000.014		EOU	000011008	1
000.001	- 1	i	00000018	CLUCK A L
000.002	786X UMI.64X	200	000000118	<b>×</b>
	1	COMMAND	D INSTRUCTION BITS.	8115.
700		ŀ	010000008	INTERNAL RESET
000.000			001000008	READER-ON CONTROL FLAG
000-000		1	000001008	RECEIVE ENABLE
000,007	794X UCI. IE		00000000	ENABLE INTERRUPTS FLAG
000.001	795X UCI.TE	EOU	000000018	TRANSHII ENABLE
	797× **	STATUS	STATUS READ COMMAND BITS.	8175•
000.040	799X USR.FE	EQU	00100008	FRAMING ERROR
000.020	801X USR.PE		000010000	PARITY ERROR
000.000			000001008	INANORILIER FETT
200 - 002	803X USR.RXR	200	807000000	TRANSMITTER READY
041.133	805		Ú8250	DEFINE 8250 ACE BITS
	807X **	8250 L	UART CONTROL AND	D BIT DEFINITIONS.
000 350	808X 809X SC.ACE	EQU	3500	SYSTEM CONSOLE PORT IF 8250 ACE
000.156	1		110	220 MIL. SEC. DELAY FOR 8250
000.000	812X UR.RBR	EQU	0	RECEIVER BUFFER REGISTER (READ ONLY)
	YOTO			

000 000				
000 000	815X			
000 *000	816X UR.DLL 817X	.r E0U	0	DIVISOR LATCH (LEAST SIGNIFICANT)
000.001	818X UR.DLM 819X	.M EQU	_	DIVISOR LATCH (MOST SIGNIFICANT)
000.001		1	1	T ENABLE
non• nor			00000018	ENABLE RECEIVED DATA AVAILABLE INTERRUPT
000*000	823X UC.RE	1 EQU	00000000	TRANSMIT RECEIVE S
000.010		1	000010000	
000-002		E011		TATEODIST INCHTSTICATION OFFICE
000.000	827X UC.11P		00000018	INTERROF INTERRUPT PENDING (O MEANS PENDING)
900*000		ĺ	000001108	
000.003	830X UR.LCR	R EQU	3	NE CC
000.000		- 1	00000000	118
000,002			0000000	
000.000	,		000000118	BIT
000.000			000001008	THO STOP BITS SELECTED
000-010	836X UC.PEN		000010008	PARITY COMPUTATION ENABLED
000.020		- 1	000100008	EVEN PARITY SELECT
000, 100	83-0X UC. 3AF		0100000	OFFICE TARLET
000.200			100000008	DIVISOR LATCH ACCESS
	841X	- 1		
000,000	842X UR.MCR		4	ADDEM CONTROL REGISTER
000.002	RAAX UC.RT	1	000000108	DAIA IERDIAAL KEADI
400.000		1 EQU	00000000	OUT 1
000, 010	846X UC.0UZ		000010000	001 2
00.020	847X UC.L.00	20	0001000	100%
000.000			2	LINE STATUS REGISTER
000.001	850X UC.DR	E	000000018	N READY
000.002		3	00000000	OVERRUN
000.000	852X UC.PE	200	000001008	PARITY ERROR
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000,000		u u	00000000	DELIA CLEAR 10 SENU
000.000	861X UC.TER	Ü	000001008	TRAILING EDGE OF RING
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000.020	863X UC.CT	E	00010000	CLEAR TO SEND
000.040		ت س ز	00100008	DATA SET READY
200	בי פי פי		9000000	
000.000	SOOX UL.KL	^	10000000	RECEIVED LINE SIGNAL DETECT

17   17   17   17   17   17   17   17	869	MTR90-1 - H/Z-89 MOMITOR Hardhare interrupt vectors		#09.02.01	01.		Unix H8ASM VI.4.1 5-Jui-80 Page 20 10:41:12 17-FE8-82	
870 #     871   #     872   #	870 * 870 * 871 * 872 ** LEVEL 0 - RESET 874 * THIS 'INTERRUPT' HAY NOT 874 * THIS 'INTERRUPT' HAY NOT 876 ** THIS 'INTERRUPT' HAY NOT 876 ** THIS 'INTERRUPT' HAY NOT 876 ** THIS 'INTERRUPT' HAY NOT 877 ** THIS 'INTERRUPT' HAY NOT 878 ** THIS 'INTERRUPT' HAY NOT 878 ** THIS 'INTERRUPT' HAY NOT 879 ** LEVEL I - CLOCK 870 ** GALL SAVALL 870 ** THEN IT IS ASSUMED TO BE 870 ** THEN IT		1 .	**		1		
873 ** LEVEL 0 - RESET     874 * THIS 'INTERRUPT' HAY NOT     876	873 ** LEVEL 0 - RESET     874 * THIS 'INTERRUPT' HAY NOT     876							en vedi selles de displacabilità de la companie de
873 ** LEVEL O - RESET  874 * THIS 'INTERRUPT' HAY NOT  876 * THIS 'INTERRUPT' HAY NOT  877	873 ** LEVEL 0 - RESET							
877 * THIS 'INTERRUPT' HAY NOT  876 * THIS 'INTERRUPT' HAY NOT  877	877 * THIS 'INTERRUPT' HAY NOT 878 * THIS 'INTERRUPT' HAY NOT 877 0RC 00A 877 0RC 00A 877 1NITO JAP INITOX 041 012 040 880 INITO.0 LXI H,PRSRAM+PRSL-1 303 073 000 881 INITO.0 LXI H,PRSRAM+PRSL-1 882 ERRPL INIT-1000A 883 ERRPL INIT-1000A 884 INTI EQU 10Q 889 ERRNZ *-11Q 891 ERRPL CLOCK 10 892 OAL 894 ERRPL CLOCK-1000A 895 FIFTH SAVALL 897 * IF THIS INTERPUT IS REP 898 * IF THIS INTERPUT IS REP 899 * IF THIS INTERPUT IS REP 899 * IF THIS INTERPUT IS REP 890 * IF THIS INTERPUT IS REP 900 * THIN IT IS ASSUMED TO 900 ERRNZ *-21A 900 ERRNZ *-21A 900 ERRNZ *-21A 900 SET CLELC 303 244 001 911 SET FRIGHT 910 SET CLELC 9	en e	- 1	45	<u></u>	1		
876   876   876   877   876   877   876   877   876   877   877   876   877	876 00A 878 1NITO JAP INITOX 041 012 040 880 INITO.0 LXI H.PFSRAH+PRSL-1 303 073 000 881 JATO.0 LXI H.PFSRAH+PRSL-1 882 ERPL INIT-1000A 883 ERPL INIT-1000A 884 H# LEVEL I - CLOCK 887 887 CALL SAVALL 026 000 893 HTI EQU 10Q 899 ERRN *-11Q 890 *				S	1	BE PROCESSED BY	
303 000 004 878 INITO JAP INITOX 303 073 000 881 INITO. LXI HPRSRAH+PRSL-1 303 073 000 881 INITO. LXI HPRSRAH+PRSL-1 882 ERRPL INIT-1000A 882 ERRPL INIT-1000A 883 ERRPL INIT-1000A 889 ERRN #-110 890 ERRN #-110 891 CALL SAVALL 026 000 892 HPP CLOCK-1000A 893 HWI D.O 303 201 000 894 JMP CLOCK-1000A 895 # LEVEL 2 - SINGLE STEP 897 #* LEVEL 2 - SINGLE STEP 898 # IF THIS INTERNUT IS REC 898 # IF THIS INTERNUT IS REC 890 # IFF THIS INTERNUT IS REC 890 # IFF THIS INTERNUT IS REC 900 # IFF THIS INTE	303 000 004 878 INITO JAP INITOX 303 073 000 881 INITO. UXI Hyprsram+prst-1 303 073 000 882 ERRPL INIT-1000A 882 ERRPL INIT-1000A 883 ERRPL INIT-1000A 884 INTI EdU IOG 890 ERRNZ +-11Q 891 ERRPL CLOCK-1000A 303 201 000 892 CALL SAVALL 900 # IF THIS INTERRUPT IS REC 898 # IF THIS INTERRUPT IS REC 899 # IF THIS INTERRUPT IS REC 900 # THEN IT IS ASSUMED TO BE 900 # THEN IT	000*000	876 877		ORG	00A		
B82   ERRPL INIT-1000A	883 ERRPL INIT-1000A 883 ERRPL INIT-1000A 884	303 000 041 012			JAP LXI AM	INITOX H.PRSRAM+PRSL-1	DO H88 EXTENSION OF INITIALIZATION (HL) = RAM DESTINATION FOR CODE INITIALIZE	
886 ## LE 887 887 889 890 890 891 303 201 000 894 898 898 899 899 899 899 890 895 896 899 890 895 896 896 896 896 896 896 896 898 898 898	886 ## LE 886 ## LE 887 889 ER 890 ER 891 315 132 000 892 CA 303 201 000 894 # LE 897 ## LE 898 # IF 900 # TH 900 # TH 900 # TH 900 # CS 905 ER 905 # LE 899		882	**************************************	ERRPL	INIT-1000A	BYTE IN WORD IOA MUST BE O	
886 ## LE 887 888 INTI EQ 889 ER 890 ER 891 302 6 000 894 # LE 897 ## LE 898 # IF 899 # IF 890 # IF 800 # IF 80	886 ** LE 887 888 INT1 EQ 889 ER 890 ER 891 315 132 000 894 MV 303 201 000 894 ER 897 ** LE 898 ** LE 899 ** LF 901 ** LS 902 ** US 903 ** US 903 ** US 903 ** US 904 INT2 EQ 905 ER 905 ER 906 ER 907 ** US 907 ** US 908 ** US 909 ** US 9		684					
886 ## LE 887 887 888 INT Eq 889 890 890 893 893 894 895 893 894 895 895 896 899 896 896	886 ## LE 887 889 INT Eq 889 890 ER 891 315 132 000 892 026 000 893 MY 303 201 000 894 898 # LE 899 # IF 900 # IF 900 # IF 900 # IF 900 # Eq 905 905 803 303 244 001 911 JH	and the control of th				eria de la companya		
898 INT1 EQ 899 ER 890 ER 890 ER 891 CA 026 000 892 CA 895 ## LE 897 ## LE 898 # 1F 899 # 1F 899 # 1F 899 # 1F 890 # 1F 901 # (S 902 # US 903 ER 904 INT2 EQ 905 ER 906 ER 906 ER 907 CA 908 CA 909 ER 909 # 174 900 # 174	889 INTL EQ 889 ER 890 ER 890 ER 891 CA 302 201 000 894 JM 895 # LE 898 # LE 898 # LE 899 # IF 890 # TH 900 # TH 900 # US 902 # US 903 ER 899 # LE 899 # LE 899 # LE 899 # CA 900 # TH 900			*	E	- CLOCK		
315 132 000 892 CA 026 000 893 MV 303 201 000 894 JM 895 # LE 898 # IF 899 # IF 899 # IF 900 # TH 900 # TH 900 # GS 901 # GS 902 # US 903 # US 904 INT2 EQ 905 ER 906 ER 906 ER 907 CA 907 CA 908 CA 909 UD * US 901 # GS 902 # US 903 # US 903 # US 904 INT2 EQ 906 ER 907 CA 909 UD * US 906 ER 907 CA	303 204 000 892 CA 891 000 893 MV 303 201 000 894 1 MV 303 201 000 899 # LE 899 # LE 899 # LE 900 # TH	000.010	1	NTI	EQU	100	INTERRUPT ENTRY POINT	
315 132 000 892 CA 026 000 893 HV 303 201 000 894 LE 895 ## LE 898 # 1F 899 # 1F 900 # 1H 901 # 689 315 132 000 908 CA 032 244 001 911 JR	315 132 000 892 CA 026 000 893 HV 303 201 000 894 JH 895 # LE 897 ## LE 898 # IF 899 # IF 900 # TH 901 # (\$\$ 902 # US 903 ## \$\$ 904 INT2 Eq 905 ER 906 ER 906 ER 907 908 CA 907 908 CA 907 909 LD 908 CA	000*000	890		ERRNZ	+-110	INTO TAKES UP ONE BYTE	
303 201 000 893 HV 303 201 000 894 ER 303 201 000 895 # LE 899 # 1F 899 # 1F 899 # 1F 900 # 1H 901 # (S 902 # US 903 # OA 315 132 000 908 CA 303 244 001 911 JH	15 132 000 893 HV 303 201 000 894 JH 303 201 000 895 ER 898 # IF 899 # IF 900 # TH 900 # TH 900 # TH 901 # (5) 902 # US 903 PV 904 INT2 EQ 906 ER 906 ER 907 PV 907 PV 908 CA 909 CA 909 PV 909 PV		891		1110	CAVALL	CAVE HEEP PECIFIEDS	
303 201 000 894 JA 303 201 000 895 ER 897 ## LE 898 # IF 898 # IF 900 # TF 901 # (S 902 # US 903 # ER 904 INT2 EQ 905 ER 905 ER 905 CA 315 132 000 908 CA 303 244 001 911 JA	303 201 000 894 JR 895 ER 897 ## LE 898 # IF 899 # IF 890 # INT 900 # (S 902 # US 903 # OS 905 ER 906 ER 906 ER 906 ER 907 908 CA 903 244 001 911 JR	315 132 026 000	893	:	AVI.	347LL 0,0	JAVE CLEN REGILLERS	
897 ** LE 898 * IF 899 * IF 899 * IF 900 * IT 901 * (S 902 * US 903 * US 904 INT2 Eq 906 ER 906 ER 906 CA 907 CA 908 CA 909 LD 909 LD 909 LD 909 LD 909 LD	897 ## LE 898 # IF 899 # IF 900 # TH 901 # (S 902 # US 903 # OS 904 INT2 Eq 905 ER 905 ER 906 CA 906 CA 907 POS 908 CA 909 LD 909 LD 909 POS 909 POS	303 201	894 895		JNP Errpl	CLOCK-1000A	PROCESS CLOCK INTERRUPT Extra byte must be o	
897 ## LE 898 # IF 899 # IF 900 # TH 900 # TH 902 # US 902 # US 902 # US 903   904   105 906   105 906   105 906   105 907   105 907   105 907   105 908   105 908   105 909   105 9	897 ** LE 898 * IF 899 * IF 900 * TH 901 * (S 902 * US 903 * US 904 INT2 EQ 905 ER 906 ER 906 ER 907 OS 907 OS 908 OS 908 OS 909 OS 90							
898 * IF 899 * IF 900 * IV 901 * (SA) 902 * US 903 * OS 904 INT2 EQ 906 ER 906 ER 907 * OS 908 CA 909 CA 9	898 * IF 899 * IF 900 * IV 901 * (S 902 * US 903 PO4 INT2 Eq 906 ER 907 PO4 ER 907 PO4 ER 907 PO4 ER 907 PO4			*	1 1	- SINGLE		
900 # TH 901 # (5 902 # US 902 # US 904 INT2 EQ 906 ER 907 906 CA 315 132 000 908 CA 909 LD 909 LD 910 • SE 910 • SE	900 # TH 901 # (S 902 # US 903 # US 904 INT2 EQ 905 ER 906 ER 907 908 CA 907 909 CA 908 CA 909 UD 909 UD 910 • SE 910 • SE				STHT 31	INTERRUPT IS REC	CEIVED HYEN NOT IN MONITOR MODE,	
901 # 15 902 # US 903 INT2 EQ 904 INT2 EQ 905 ER 906 ER 907 CA 932 QA 001 911 JH	901 # 15 902 # US 903		1		THEN IT	IS ASSUMED TO BE	E GENERATED BY A USER PROGRAM	
904 INT2 EQU 20A LEVEL 2 ENTRY 905 905 ERRN2 4-21A INTI TAKES EXTRA 907 907 CALL SAVALL SAVE REGISTERS 032 909 LDAX D (A) = (CTLFLG) 303 244 001 911 JMP STPRTH STPRE	904 INT2 EQU 20A LEVEL 2 ENTRY 905 ERRNZ #-21A INTI TAKES EXTRA 905 GALL SAVALL SAVE REGISTERS 032 909 LDAX D (A) = (CTLFLG) 303 244 001 911 JMP STPRTN STEP RETURN				USER PR	DGRAM IS ENTERED	THROUGH (UIVEC+3	
906 ERRNZ #-21A INTI TAKES EXTRA 906 CALL SAVALL SAVE REGISTERS 032 909 LDAX D 036 910 SET CTLFLG 303 244 001 911 JMP STPRTN STEP RETURN	906 ERRNZ #-21A INTI TAKES EXTRA 906 CALL SAVALL SAVE REGISTERS 032 909 LDAX D (A) = (CTLFLG) 303 244 001 911 JHP STPRTN STEP RETURN	000 000		NT2	Equ	20A	LEVEL 2 ENTRY	
315 132 000 908 CALL SAVALL 032 909 LDAX D 910 SET CILFLG 303 244 001 911 JMP STPRIN	315 132 000 908 CALL SAVALL 032 909 LDAX D 303 244 001 911 JMP STPRTN	000°000	906		ERRN2	*-21A	TAKES EXTRA	
303 244 001 911 JAP STPRTN	303 244 001 911 JMP STPRTM	315 132	906		CALL	SAVALL	SAVE REGISTERS (A) = (CTLFLG)	
		303 244	1		SET	CTLFL6 STPRTN	STEP RETURN	
						MANAGEMENT STATEMENT OF THE STATEMENT OF		

HARDWARE INTERRUP	INTERRUPT VECTORS						
		913	* *	NI 0/I	INTERRUPT VECTORS.		
		914 915	# #	INTERR	ERRUPTS 3 THROUGH 7	3 THROUGH 7 ARE AVAILABLE FOR GENERAL I/O USE.	
		916	* *	THESE	INTERRUPTS ARE N	ST SUPPORTED BY MTR88. AND SHOULD	
		918 919	* *	NEVER (THROU	OCCUR UNLESS THE GH UIVEC)	NEVER OCCUR UNLESS THE USER HAS SUPPLIED HANDLER ROUTINES (THROUGH UIVEC)	
000.000		920 921		ORG	30A		
000*000	303 045 040	922 923	INT3	- GHD	UIVEC+6	JUMP TO USER ROUTINE	
000,033	102 061 064	924		90	1020,610,640,629,1029	.0,1020 PART NUMBER 444-142	
		927	***************************************				
000.000		928		ORG	40A		
000.000	303 050 040	930	INT4	JAP	UIVEC+9	JUMP TO USER ROUTINE	
000.043	044 122 116	932		90	440,1220,1160,1020,440	.029,449 SUPPORT CODE	
000.050		934		ORG	50A		
000.000	303 053 040	936 937	INTS	JMP	UIVEC+12	JUMP TO USER ROUTINE	
		938 939					
		940	* *		DELAY TIME INTERVAL.	AL.	A PARTICIPATION CONTINUES AND
Annual manager of the based service resemblished to the based of the b	ndergonem en en eddergonem en particular en	943	* *	ENTRY	(A) - MILLISECT	- MILLISECOND DELAY COUNT/2	in alle gripping de de la committe
		944	*	USES	AyF		
000 * 000	e dale per di del de	946		ERRNZ	*-53A		
1	365	948	DLY	PUSH	PSK	SAVE COUNT	
000.055	303 143 002	950		- GHD	HRNO	PROCESS AS HORN	
090•000		952		ORG	60A		
000°000	303 056 040	955	INT6	d E P	UIVEC+15	JUMP TO USER ROUTINE	A MARIA MARI
		956 957					
000.063 0	076 320 303 235 001	958	•09	I AE T	A,CB,SSI+CB,CLI+CB,SPK SSTI	+CB.SPK OFF MONITOR MODE LIGHT RETURN TO USER PROGRAM	

005.070 303 661 040 '944 1817 - JHP UTFEC+13 JUNP TO USER ROUTHE	961 962 963 303 061 040 964	ORG JHP	
303 061 040 964 INT7 JAP UIVEC+18	962 963 303 061 040 964	ORG JAP	
000,070 303 061 040 964 INT7 JAP UIVEG+18	000.070 303 061 040 964	G E 7	
		ANT AND THE STATE OF	
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MTR90-1 - +	1/Z-89 MONITOR		*09.02.01	2.01.		Unix H8ASH V1.4.1 5-1ui-80 Page 23
MASTER CLEA	MASTER CLEAR PROCESSING				And the state of t	
		196	#	INII -	INITIALIZE SYSTEM	EA
n. 1947 i o skiprovan y d. je skižimi dinakljanski kalejanskim dinakljanskim dinakljanskim dinakljanskim dinak	Alle Alle Alle Alle Alle Alle Alle Alle	896	*		Commence of the contract of th	
And delical field and formers and representations of the second s	e ferfishe e e de la gregoria de la gregoria de la grecola de menghes de companyon este establismo de acceptor	969	<b>#</b> 4	I LIMI	IS CALLED WHENEVER A HARDWARE	R A HARDWARE MASTER-CLEAR IS INITIATED.
		971	*	SETUP	ITR88 CONTROL CE	LLS IN RAM.
		27.6	* +	DECODE	HOW MUCH MEMORY	IDE HOM MUCH MEMORY EXISTS, SETUP STACKPOINTER, AND
		974	*	E E	HE MUNISUK LOUP	
		975	*	ENTRY	FROM MASTER CL	EAR
		976	*	EXIT	INTO MTR88 MAIN LOOP	N LOOP
000 000		978		ERRN Z	*-730	
		626			may ta de semple per de producti de semple de desta de desta de desta de desta de semple de semple de semple d	
000.073	032 167	980	L	LDAX	- -	COPY *PRSROM* INTO RAM
000.075	053	982		DCX		1111
000,076	9	983		INR	E	INCREMENT SOURCE
220°000	302 073 000	9 9 9 8 7 8 5		7 V 7		IF NOT DONE
004.000		986	SINCR	Eau	4000A	SEAKCH INCREMENT
000.102	026 004 041 000 034	988		HVI	D.SINCR/256 H.START-SINCR	(DE) = SEARCH INCREMENT (HL) = FIRST RAM - SEARCH INCREMENT
		990	*	DETERMINE	NE MEMORY LIMIT.	
the state of the s		665			Complete to the control of the contr	
000.107	167	993	INITI	MOV	M.M.	RESTORE VALUE READ
000,110	031	994		DAO	, 0	INCREMENT TRIAL ADDRESS
000	710	242		A OL	F & 2	(A) = CORKENI MEMORY VALUE
000.113	276	266		ž	E E	TX TO CHANGE I
000.114	302 107 000	866		SNE	INITI	IF MEMORY.CHANGED
000.117	053	1000	INITZ	DCX	H	
		1001				
000.120		1002 1003		SPHL		SET STACKPOINTER - MEMORY LIMIT -1
000.121 000.122	345 041 322 000	1004	·	PUSH	H H•ERROR	SET *PC* VALUE ON STACK
000.125		1006		PUSH	H	SET "RETURN ADDRESS"
ed transmission of the contract of the contrac						
	essential des establishes and security of the second statement of the second security of the second				management with a series of the series of th	
Total designations of promotions of promotions of the second of the seco						
Seminimore resultante de la companya del companya de la companya de la companya del companya de la companya del la companya de				tangai, makhassi (tto attanana		man property designations and the second of
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and the second s						
" (Adding) we stray implements (address) or unsubjective	der der der für der fer der der der der der der der der der d				And the second s	
	and the state of t		Andrew Constitution of the		esseje de salado - mangalajo o	

1(	- 1	SAVALL	- SAVE ALL REGISTERS	TERS ON STACK.	to the second se
āā		SAVALL	IS CALLED WHEN A	VALL IS CALLED WHEN AN INTERRUPT IS ACCEPTED, IN ORDER TO	
	1012 * 1013 *	SAVE TH	IE CONTENTS OF TH	E REGISTERS ON THE STACK.	
1	1	EXIT	CALLED DIRECTLY AL REGISTERS P	CALLED DIRECTLY FROM INTERRUPT ROUTINE. ALL REGISTERS PUSHED ON STACK,	
1			IF NOT YET IN M	ONITOR MODE, REGPTR - ADDRESS OF REGISTERS	A CONTRACTOR OF THE PROPERTY O
7		And the second s	(DE) - ADDRESS OF CTLFLG	OF CTLFLG	
	1020	ERRMI	132A-#		
			132A	123 L 1 0 L 1167 TOB	
343 325	1022 SAVAL 1023	ز	0	SEL MIL UN STAUM TUT	
305	25	PUSH HZ HZ	35 V Q Q		
353	126	ХСИС		(D,E) = RETURN ADDRESS	
041 012 000	127	LXI	H910	10000 to 10000 to 10000 to	
	1028 1029	OAD	4	(HyL) # AUUKESS UF USEKS SF	
Á.	30 **	REPLACE	THESE INSTRUCTI	PLACE THESE INSTRUCTIONS WITH A JUNP AROUND THE NMI VECTOR JUMP	
1		PUSH	I	SET ON STACK AS "REGISTER"	
T		PUSH	0	SET RETURN ADDRESS	-
T	)34 * )35 *	LXI	D,CTLFLG 0	(A) = CTLFLG	
000,143 303 105 004 10	336 137	- AH	SAVALLX	GO TO SAVALL EXTENSION	
	1038 1039 **	ENTRY P	TRY POINT FOR THE 280 NMI	IXX	
	1040 *				
000.000	142	ERRNZ	#-66H	ZBO NMI ADDRESS	
1000-146 303 116 006 1	1043	JAP T	 Z		
		•			
000.000	346	ERRNZ	SAVALLR-151A	DD NOT CHANGE ORGANIZATION	
000.151	1048 SAVALLR 1049		*	SAVALL EXTENSION RETURN ADDRESS	
750	)50	CHA	4	data national and days at order partition of the	
346 060	152	AN L	CB = M   L + CB = 33 L	RETURN IF MAS INTERRUPT OF MONITOR LOOP	-
002 000	)53	LXI	Н,2		
071	)54 Sec	DAO	SP	(H)L) = ADDRESS OF "STACKPTR" ON STACK	
000.164 311	156	RET	NEGI IN		

		1084	*	CLOCK -	- PROCESS CLOCK INTERRUPT	TERRUPT
		1085		CLOCK IS EI	S ENTERED WHENEVE	CK IS ENTERED WHENEVER A MILLISECOND CLOCK INTERRUPT IS
		1087	* *	PROCESS	ED.	
		1089		TICCNT	TICCNT IS INCREMENTED EVERY INTERRUPT.	ERY INTERRUPT.
000 000		1091		ERRN Z	#-201A	
000,201	052 033 040	1093	CLOCK	LHCD	TICCNT	
000.204	042 033 040	1095		SHLD	TICCNT	INCREMENT TICCOUNT
000.210	072 011 040	1096		LDA	CTLFLG OP.CTL	CLEAR CLOCK INTERRUPT FLIP-FLOP
0.643		1099	#	FXIT CL	IT CLOCK INTERRUPT.	
	;	1101	ļ	1 X I	B.CTLFLG	
000.220		1103		LDAX	8 C8 . MT1	(A) = CTLFLG
000.223	302 172 000	1105	A DESCRIPTION OF THE PERSON OF	ZNC	INTXIT	IF IN MONITOR MODE
000.226	1	1106		ERRNZ	CTLFLGMFLAG-1	
000.227	012	1108		LDAX	8	(A) = OFFLAG
000 000	1	1109		ERRNZ RAL	00.AL.1-2004	AS SOME TIME GROEN
000.231	332 270 000	1111		၁၄	CLK4	SKIP IT
		1113	*	NOT IN	T IN MONITOR MODE. CHE	CHECK FOR HALT
400	610 760	1114		124	A . 10	(A) = INDEX OF -PP REG
000.236		1116		CALL	LRA.	LOCATE REGISTER ADDRESS
10.241	136	7111		MOV	m I	
000.243	1	1119		NOW Y	E. 0	(0,E) = PC CONTENTS
00.245	032	1121		LDAX	D MI.HLT	CHECK FOR HALT
000.250		1		ZNC	CUI1 A, A. BEL	DING BELL
00.255	315	1		CALL	#CC A. H.	"H" FOR HALT
00.262	315	t		CALL	T C C	
00.265	303 326	1129	**	3°	ERROR	IF HALT, BE IN MONITOR MODE
		113	*	NONE OF	THE ABOVE,	SO ALLOW USER PROCESSING OF CLOCK INTERRUPT
020.220		1133	3 CLK4			
000.270	303 165 000	113	5	JHP	CUI1	ALLOW USER PROCESSING OF CLUCK

and the second s						
	1161	**	ERROR	- COMMAND ERROR.		
	1162	* *	ERROR	ROR IS CALLED AS A *	A *BAIL-OUT* ROUTINE.	
	1164	* *	IT RES	RESETS THE OPERATIONAL	INAL MODE, AND RESTORES THE STACKPOINTER	
	1166	* *	ENTRY	NONE		
	1168	* *	EXIT	TO MTR LOOP CTLFLG SET		on majoritet — vere utjesticit datų ir krausiski karisticitų ir kilosiski majoritetų.
	1170	* *	USES			
	1172		ERRNZ	#-322A		
	1174	ERROR	EQU	*		
)41 010 040 76	1176		LXI	H MFLAG	A DE AG	
346 275	1178		ANI	3770-U0.DDU-U0.NFR		
043	1180		INX	T S COLOR S S S S S S S S S S S S S S S S S S S		AND AND THE PARTY OF THE PARTY
1	1182		ERRNZ	CTLFL6 MFLAG-1		Printer - Management de Broaden aus maneries — a subject a printer de la sacrificación de la sacrificación de s
052 035 040	1184		LHLD	REGPTR	PESTORE STACK POINTED TO EMPTY STATE	
115 136 002	1186		CALL	ALARM		en e
	1188	*	I X	MONITOR LOOP.		
	1189	*				
	1191		ERRNZ	*-344A		
	1192	470	1103			
373	1194	¥ E	O I II	•		
	1195	MTR1	EQU	*		
141 345 000 145	1197		LXI PUSH	H9MTR1 H	SET "MIRI" AS RETURN ADDRESS	Minimization of the contract o
303 135 011 315 100 006	1199	MTR. 15	JHP CALL	CKAUTO TYPMSG	CHECK AUTO BOOT, IF NOT CONTROL BACK TO NEXT PRINT 'H: "	TO NEXT
	1201	MTR.2	CALL	RCC	READ A CONSOLE CHARACTER	
137	1203	ı İ	IZ .	010111118	HAKE SURE ITS UPPER CASE TO MATCH TABLE	LE
006 012	1205		HVI	B, MTRAL	(B) = LENGTH OF TABLE	
276	1207	MTR.3	CMP	* 3	SEE IF CHARACTER FROM CONSOLE - TABLE	ENTRY
12 014 001	1209		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	MTR.4	IF EQUAL	
043	1211		XXX	rı		
	1			•	The second secon	and development of the control of th