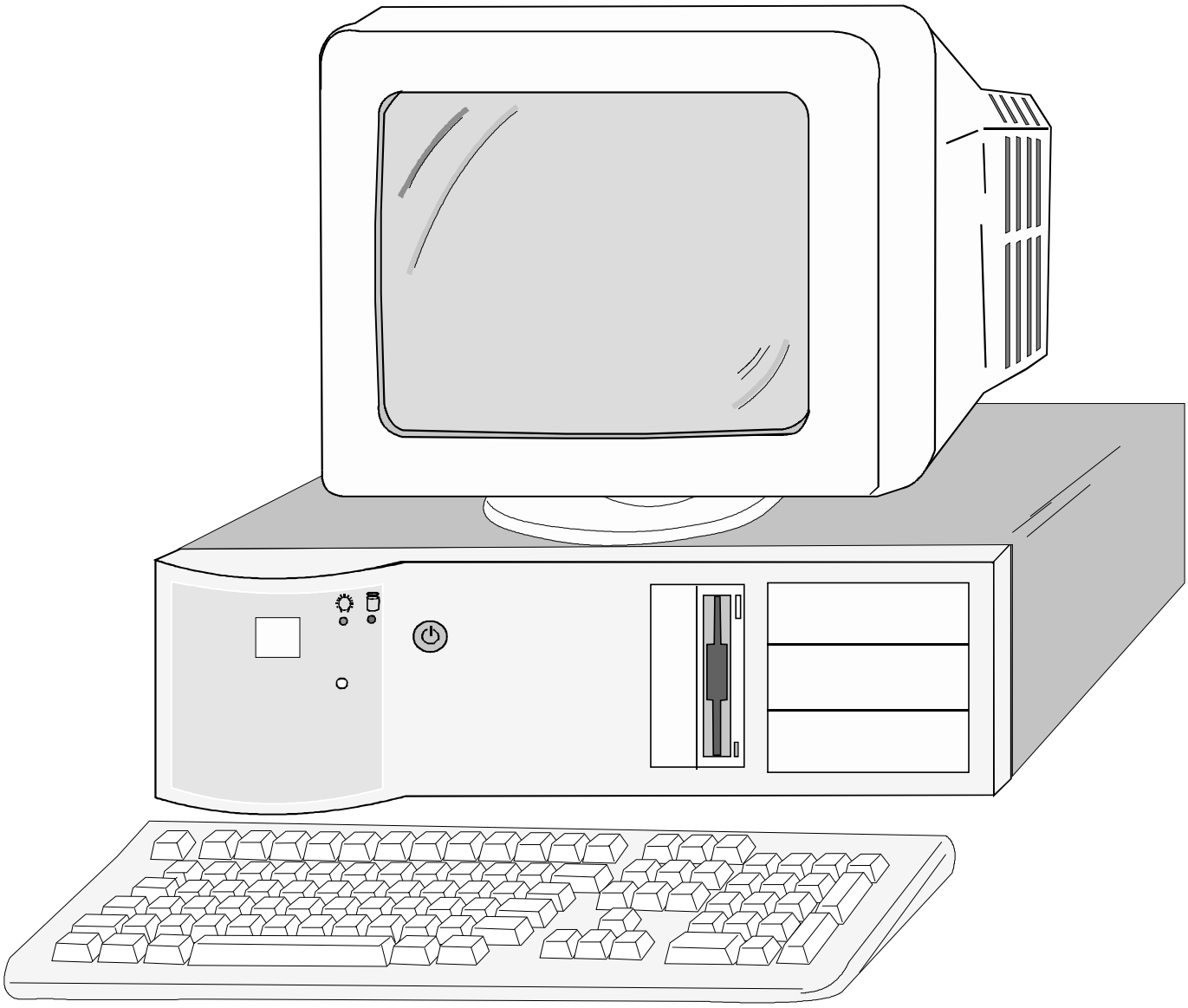
# DATA MANAGEMENT SYSTEM (DMS) CONFIGURATION LISTING for COULTER® STKS™ Analyzer, COULTER® MAXM™ Analyzer and COULTER® HmX Analyzer SERIES SYSTEMS

**Service Document**



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BECKMAN COULTER™

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Update with RadiSys tower computer and setup information, 3.2 GB hard drive Configuration, Corrections and Changes made to Instrument Registered Trademarks and Trademark identification, Corrections made to expansion slot table for RadiSys 100 MHz Pentium computer, Updated parts listing to reflect parts released since initial release of this document, Updated to reflect DMS configurations for the COULTER® HmX Analyzer, Added Japanese DMS configuration, Added Raw Data Collection Procedure.

## Revision C, August/2000

Released by CN 007660-0385 / SM 11934

New Information and corrections are identified by a change bar in the inside margin of the text.

Corrected Trademark information / Converted the document from previous format to format which can be converted to HTML / Changed numbering format to match Technical Communications templates for service manuals / Included 3.2 and 8.4 GB hard drive information to applicable tables and procedures / Added HmX to procedures in Partition Information and Formatting and Verification procedures / Removed STKS™ Analyzer CD4,CD8 Software Option Installation Procedure / Removed Options Installation Error Trapping information from Loading HmX Software procedure and moved error table to Loading MAXM Software procedure only / Corrected MAXM™ Analyzer DMS password location file name / Included 8.4 GB hard drive in parts listing / Updated VGA Video card part numbers in parts listing / Added new Tatung 15” color monitor and 15” LCD color monitor to parts listing / Corrected spelling of Welch Allyn in parts listing / Added power to PC monitor cable, CE universal power cable to parts listing / corrected part numbers for MAXM™ Analyzer and STKS™ Analyzer digi-cables / Added Service Disk 3 to parts listing / Added 8.4 GB hard drive information, updated current software revision information and notes to DMS computer drive configuration tables / Corrected spelling of Raw on figures for Raw Data Collection procedure. Added new AX Video card to Japanese DMS configuration procedures.

## REVISION STATUS

# CONTENTS

## CONTENTS

# TABLES

## 1.1 Introduction

### Document Layout

This document is divided into sections in order to minimize documentation update changes. This layout allows for change pages to be inserted without affecting other sections. The layout also provides that all component information can be retained when new information is added. This will enable users of this document to have access to all COULTER® STKS™ Analyzer, COULTER® MAXM™ Analyzer and COULTER® HmX Analyzer Series DMS information in one complete document.

### Scope

The intention of this document is to provide very specific guidelines for configuration of the COULTER® STKS™ Analyzer, COULTER® MAXM™ Analyzer and COULTER® HmX Analyzer Series DMS. The use of incorrect settings may render the system unstable and make troubleshooting intermittent problems extremely difficult. This document includes replacement and configuration procedures for all released computer systems and hardware for the STKS™ Analyzer, MAXM™ Analyzer and HmX Analyzer Series DMS.

**CAUTION** It is possible to configure some components or software using settings other than the settings detailed in this manual. The use of incorrect settings may make future system upgrades or repairs to the system extremely difficult due to hardware and/or software conflicts. Any deviations from the settings specified in this document will also make troubleshooting and identifying intermittent problems extremely difficult.

**WARNING** This document is intended to supply configuration information to assist experienced service personnel for repair of the COULTER® STKS™ Analyzer, COULTER® MAXM™ Analyzer and COULTER® HmX Analyzer Series DMS. This manual is not intended to provide the necessary technical capabilities and know-how in order to properly troubleshoot and repair a DMS computer. Beckman Coulter assumes no liability whatsoever for any personal injury or property damage resulting from maintenance and/or repair performed by persons not employed by Beckman Coulter.

### Function

COULTER® STKS™ Analyzer, COULTER® MAXM™ Analyzer and COULTER® HmX Analyzer Series DMS is a combination of hardware and the program software, which provides a customer interface with data gathered on the STKS™ Analyzer, MAXM™ Analyzer HmX Analyzers.

### Transporting

If the DMS computer and monitor will be transported over a distance, the original packaging (or enough padding as reasonably possible) should be used to protect the computer and monitor from excessive vibration or shock.

### Safety Precautions and General Service Information

Connecting or disconnecting cables with the power ON can result in injury from an electrical shock. This can result in electrical spikes which can result in damage to the hardware. When completing any procedures that require disconnecting cables to the computer base, make sure the power is OFF.

Turn Power OFF to any peripherals connected to the DMS prior to disconnecting them or working on the DMS computer. Failure to do so may result in damage to the DMS computer or the peripheral device.

Standard laboratory procedures should be followed during the operation and/or servicing of the DMS computer system. These practices include, but are not limited to, use of barrier protection, such as gloves, protective eye wear, and suitable laboratory attire.

Never remove any covers without making sure the power is OFF and the new power source is disconnected. The computer base and monitor contain high voltages that can cause injury or death.

Even a small electrostatic discharge can damage circuit cards, RAM memory or the central processing unit, (c.p.u.). A damaged component might not fail immediately, but over time it will become worse and possibly cause an intermittent problem. Be very careful to handle cards only by the edges. Do NOT touch the gold/silver edge-connectors or any of the components on the board. Leave components in their anti-static bag until ready for installation. ALWAYS wear a ground strap and utilize electrostatic discharge, (ESD) protection when handling computer components.

Always SHUTDOWN and POWER OFF the DMS computer before moving it. Any sudden jar or shock may permanently damage the hard drive resulting in loss of all data. Hard drives are more resistant to shock if they are shut down.

Never spray or pour cleaners directly on the computer base or monitor. Any fluid that runs inside the monitor or computer base may result in injury from an electronic shock or cause an electrical short, resulting in electrical damage to the hardware.

## Hazard Conventions

**Table 1.1-1 Hazard Conventions**

| | |
|---|---|
| Warning | Might cause injury. |
| Caution | Might cause damage to the instrument |
| Note | Critical information required to complete a procedure. |

## 1.2 Acronyms Terms and Definitions

### Definitions of Acronyms and Terms

**Table 1.2-1 Acronyms, Terms and Definitions**

| Term | Definition |
|---|---|
| + | Used to show keys that must be pressed simultaneously. (i.e., Press Ctrl+Alt+Delete) |
| < > | Used to enclose the name of a key on the keyboard. |
| AC | Alternating current: This is used to refer to the voltage at the wall outlet which is either 220VAC or 110VAC. |
| Boot | To start the computer system and load the operating system. |
| CMOS | Complementary Metal Oxide Semiconductor. A logic circuit family that uses very little power. |
| Computer Base | The computer case including the system card, drives and circuit cards. |
| Configuration | The hardware and software settings that allow different hardware and software components of a computer system to communicate. |
| c.p.u. | Central Processing Unit: The integrated chip that performs computing functions of the computer. |
| ESD | ElectroStatic Discharge |
| Enter | Type the exact characters that are shown in quotes. |
| G or GB | Gigabyte |
| IDE | Intelligent *(or Integrated)* drive electronics. |
| IRQ | Interrupt Request Lines: A bus signal line used to notify the processor that an event has taken place that requires action. |
| Load | Loading a program includes all steps to allow a user to access the program screens. |
| M or MB | Megabyte |
| MFM | Modified Frequency Modulation |
| MHz | Megahertz: 1,000,000 Hz |
| Press | Press the given key on the keyboard. (example Press Ctrl) |
| RAM | Random-Access-Memory: The type of computer memory that can be used to store information while a program is running. The information in RAM is not saved when the computer is powered down. |
| Reboot | To shut down and restart a computer including the software. |
| Select | Mark an item (i.e., check boxes and list boxes). |
| System card | The large printed-circuit board commonly referred to as a mother board on which most electronic devices are mounted. All other circuit cards, drives and peripherals receive control signals or information from the system card. |
| DMS | Data Management System |
| STKS™ Analyzer 1 Series | All Non Retic Ready STKS™ Analyzer instruments, (Software Revisions beginning with the numeral 1). |
| STKS™ Analyzer 2 Series | (Software Revisions beginning with the numeral 2 and higher) |
| EPROM | Erasable Programmable Read Only Memory |

## 2.1 VCS 301Z

**Figure 2.1-1**

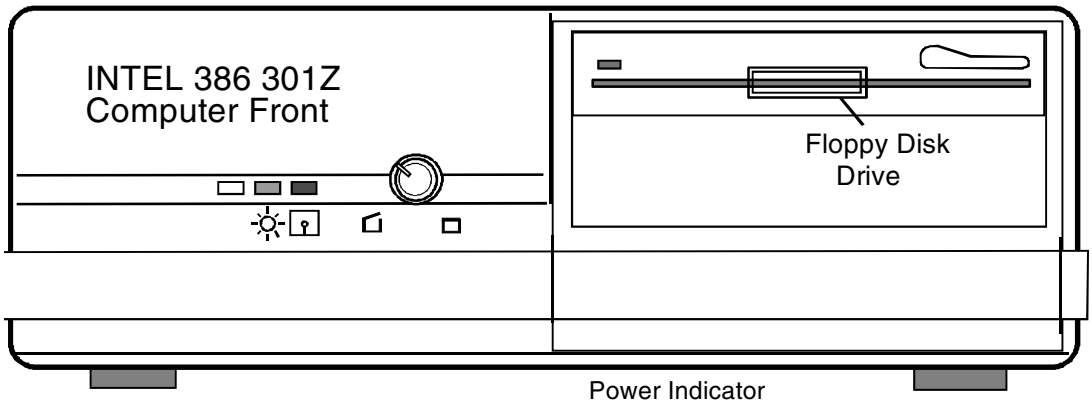



**Figure 2.1-2**

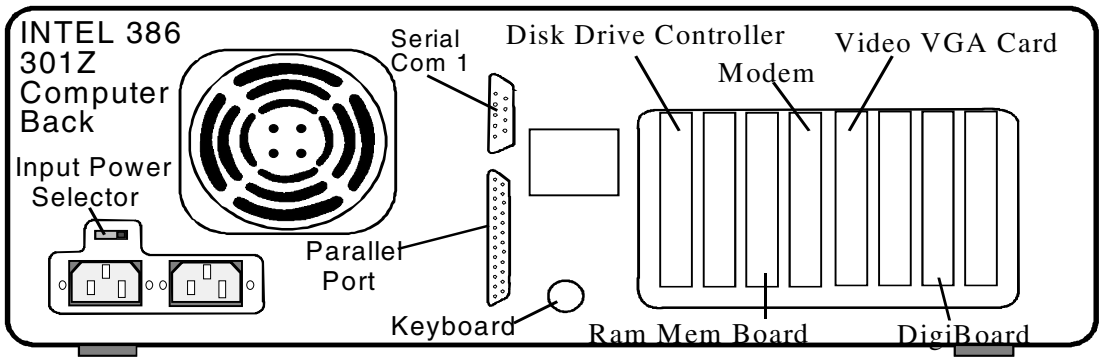
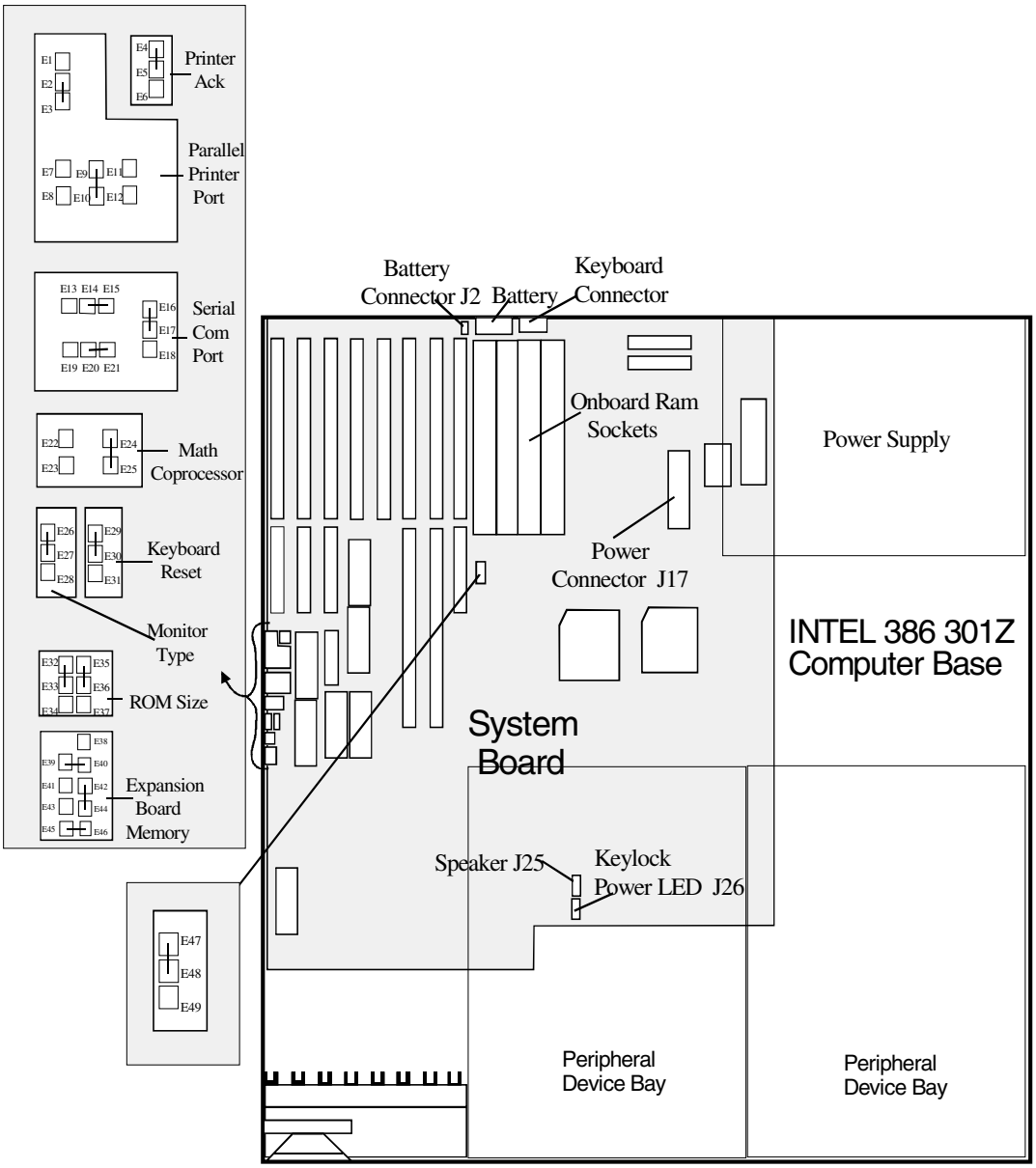


**Figure 2.1-3**


E1
E2
E3
E4
E5
E6
Printer Ack
E7
E9
E11
E8
E10
E12
Parallel Printer Port
E13 E14 E15
E16
E17
E18
E19 E20 E21
Serial Com Port
E22
E24
E23
E25
Math Coprocessor
E26
E29
E27
E30
E28
E31
Keyboard Reset
Monitor Type
E32
E35
E33
E36
E34
E37
ROM Size
E38
E39
E40
E41
E42
E43
E44
E45
E46
Expansion Board Memory
E47
E48
E49
Battery Connector J2
Battery
Keyboard Connector
Onboard Ram Sockets
Power Supply
Power Connector J17
INTEL 386 301Z Computer Base
System Board
Speaker J25
Keylock Power LED J26
Peripheral Device Bay
Peripheral Device Bay

## VCS 301Z CMOS Setup

*Phoenix Technologies Ltd.*
*System Configuration Setup VX.X*
*Time:XX:XX:XX*
*Date: XXXXXXXX,XXXX*

VCS 301Z CMOS Setup

| | |
|---|---|
| *Diskette A:* | *3.5 Inch, 1.2 MB* |
| *Diskette B:* | *Not Installed* |
| *Hard Disk C:* | *Type (SEE NOTE 2 BELOW)* |
| *Hard Disk D:* | *Not Installed* |
| *Base Memory:* | *640 KB* |
| *Extended Memory:* | *3072 KB* |
| *Display:* | *EGA/VGA* |
| *Keyboard:* | *Installed* |
| *Coprocessor:* | *Installed* |

*Press <PAGE UP> to select the next configuration setup menu.*

Ensure the configuration is as indicated below.

*Phoenix Technologies Ltd.*
*System Configuration Setup VX.X*
*Time:XX:XX:XX*
*Date: XXXXXXXX,XXXX*

*Shadow BIOS ROM: DISABLE*

NOTES:

To enter the **CMOS Setup**, press Ctrl+Alt+Insert simultaneously. This will display the System Configuration Setup menu. Ensure the configuration is as indicated below. Follow the instructions on the monitor to change any of the entries.

**Table 2.1-1 VCS 301Z Drive Size and Setup Information**

| | CYL | HD | PRE | LZ | SEC | SIZE | |
|---|---|---|---|---|---|---|---|
| **Type 48** | 723 | 13 | 0 | 0 | 51 | 234 | |
| **Type 44** | 819 | 6 | 0 | 0 | 17 | 40 | |
| **Type 48** | 1011 | 15 | 0 | 1011 | 17 | 325 | |
| **Type 48** | 1024 | 16 | 0 | 1023 | 63 | 504 | (850MB and Higher) |

## VCS Analyzer 301Z Jumper Configuration

**Table 2.1-2 VCS Analyzer 301Z Jumper Configuration**

| Empty Jumper | Jumper Connected | Description |
|---|---|---|
| E1 | E3 TO E2 | PRINTER PORT **LPT1** |
| E6 | E4 TO E5 | PRINTER **ACKNOWLEDGE** |
| E7 | E9 TO E10 | LPT1 **ENABLED** |
| E8 | E14 TO E 15 | SERIAL PORT SELECT **COM1** |
| E11 | E16 TO E 17 | SERIAL PORT SELECT **COM1** |
| E12 | E20 TO E21 | SERIAL PORT SELECT **COM1** |
| E13 | E24 TO E25 | MATH COPROCESSOR **INSTALLED** |
| E18 | E26 TO E 27 | MONITOR TYPE **COLOR** |
| E19 | E29 TO E30 | KEYBOARD RESET **ENABLED** |
| E22 | E32 TO E33 | ROM SIZE **64K** |
| E23 | E35 TO E36 | ROM SIZE **64K** |
| E28 | E38 TO E40 | 32 BIT MEMORY BOARD |
| | | **NOT INSTALLED** |
| E31 | E42 TO E44 | 32 BIT MEMORY BOARD |
| | | **NOT INSTALLED** |
| E34 | E45 TO E46 | 32 BIT MEMORY BOARD |
| | | **NOT INSTALLED** |
| E37 | E47 TO E48 | SET S1 WAIT STATE IN 32 BIT MEM |
| | | **NOT INSTALLED** |
| E39 | | |
| E41 | | |
| E43 | | |
| E49 | | |

## Expansion Slots

Expansion Slot # 1 - Cadac Card

Expansion Slot # 2 - Spare

Expansion Slot # 3 - Metrabute Card

Expansion Slot # 4 - Video Display Adapter Card

Expansion Slot # 5 - Service Modem (115 Volts only)

Expansion Slot # 6 - Spare

Expansion Slot # 7 - Metrabyte Card

Expansion Slot # 8 - WDA Disk Drive Controller

Expansion Slot # 9 - Serial Parallel on Motherboard

**Table 2.1-3 VCS 301Z Expansion Slots, Switch and Jumper Configurations**

| Slot # | Card Name and Part Number | Switch Position | Jumper/IRQ Position | Connection |
|---|---|---|---|---|
| **Slot #1** | Cadac Card PN 6703690 | POS - 12345678<br>SW2 - 01110011<br>SW1 - 00000 | IRQ Jumper X4 | Analog P3<br>Digital P4 |
| **Slot #2** | Spare 8/16 Bit Slot | Spare | Spare | Spare |
| **Slot #3** | Metrabyte RS-232 Serial PN 2016255 | Position - 1234567<br>Protocol - 100111<br>Base Addr - 0100010 | IRQ 5 | Host COMM |
| **Slot #4** | Display Adapter Card | Position - 5 ON, (IF VEGA 7) | None | Monitor VGA |
| **Slot #5** | Zoom, PC 2400 Bard Modem | None | J1 - COM 2<br>J2 - COM 1,2<br>IRQ - 3 | COM 3 |
| **Slot #6** | Spare 8/32 | Spare | Spare | Spare |
| **Slot #7** | Metrabyte RS-232 Serial PN 2016255 | Position - 1234567<br>Protocol - 100111<br>Base Addr - 0000010 | IRQ 7 | Ticket PTR |
| **Slot #8** | WDA Disk Controller | None | E2 to E3<br>E5 to E6<br>E10 to E11 | Set by Intel |
| **Slot #9** | Serial Parallel on Motherboard | Set by Intel | Set by Intel | Set by Intel |

NOTES:

1. Monitor A/C Cable must be connected to the Computer (aux - Connector) in all configurations.
2. The VCS Computer A/C Cable must be connected to the Analyzer Power Supply. The same is true for the Ticket or Graphics Printer Options.
3. Definitions for Zero and One - (0=OFF) and (1 = ON).
4. Zoom Modem in slot # 5 is only used in 115/AC.

## STKS™ Analyzer 301Z CMOS Setup

*Phoenix Technologies Ltd.*
*System Configuration Setup VX.X*
*Time:XX:XX:XX*
*Date: XXXXXXXX,XXXX*

| | |
|---|---|
| *Diskette A:* | *3.5 Inch, 1.2 MB* |
| *Diskette B:* | *Not Installed* |
| *Hard Disk C:* | *Type (SEE NOTE 2 BELOW)* |
| *Hard Disk D:* | *Not Installed* |
| *Base Memory:* | *640 KB* |
| *Extended Memory:* | *3072 KB* |
| *Display:* | *EGA/VGA* |
| *Keyboard:* | *Installed* |
| *Coprocessor:* | *Installed* |

*Press <PAGE UP> to select the next configuration setup menu.*

Ensure the configuration is as indicated below.

*Phoenix Technologies Ltd.*
*System Configuration Setup VX.X*
*Time:XX:XX:XX*
*Date: XXXXXXXX,XXXX*

*Shadow BIOS ROM: DISABLE*

NOTES:

To enter the **CMOS Setup**, press Ctrl+Alt+Insert simultaneously. This will display the system configuration setup menu. Ensure the configuration is as indicated below. Follow the instructions on the monitor to change any of the entries.

**Table 2.1-4 STKS 301Z Drive Size and Setup Information**

| | CYL | HD | PRE | LZ | SEC | SIZE | |
|---|---|---|---|---|---|---|---|
| **Type 48** | 723 | 13 | 0 | 0 | 51 | 234 | |
| **Type 44** | 819 | 6 | 0 | 0 | 17 | 40 | |
| **Type 48** | 1011 | 15 | 0 | 1011 | 17 | 325 | |
| **Type 48** | 1024 | 16 | 0 | 1023 | 63 | 504 | (850MB and Higher) |

**Table 2.1-5 STKS™ Analyzer Intel® 301Z Jumper Configuration**

| Empty Jumper | Jumper Connected | Description |
|---|---|---|
| E1 | E3 TO E2 | PRINTER PORT **LPT1** |
| E6 | E4 TO E5 | PRINTER **ACKNOWLEDGE** |
| E7 | E9 TO E10 | LPT1 **ENABLED** |
| E13 | E14 TO E15 | SERIAL PORT SELECT **COM1** |
| E18 | E16 TO E 17 | SERIAL PORT SELECT **COM1** |
| E19 | E20 TO E21 | SERIAL PORT SELECT **COM1** |
| YES | E24 TO E25 | MATH COPROCESSOR **INSTALLED** |
| E28 | E26 TO E27 | MONITOR TYPE **COLOR** |
| E31 | E29 TO E30 | KEYBOARD RESET **ENABLED** |
| E34 | E32 TO E33 | ROM SIZE **64K** |
| E37 | E35 TO E36 | ROM SIZE **64K** |
| E38 | E39 TO E40 | 32 BIT MEMORY BOARD **INSTALLED** |
| E41 | E42 TO E44 | 32 BIT MEMORY BOARD**NOT INSTALLED** |
| E43 | E45 TO E46 | 32 BIT MEMORY BOARD **NOT INSTALLED** |
| E49 | E47 TO E48 | SET S1 WAIT STATE IN 32 BIT MEM **NOT INSTALLED** |
| E8, Ell, E12 | | |
| E22, E23 | | |

## Expansion Slots

Expansion Slot # 1 - Spare

Expansion Slot # 2 - Digiboard Rev (H, I, J, K, L, M, N) only with daughter board Rev (I or J)

Expansion Slot # 3 - Spare

Expansion Slot # 4 - Video Display Adapter Card

Expansion Slot # 5 - Service Modem (115 Volts only)

Expansion Slot # 6 - 2 Meg Ram Board

Expansion Slot # 7 - Spare

Expansion Slot # 8 - Disk Drive Controller

## 2.2 STKS™ Analyzer, MAXM™ ANALYZER 300SX-16

**Figure 2.2-1**

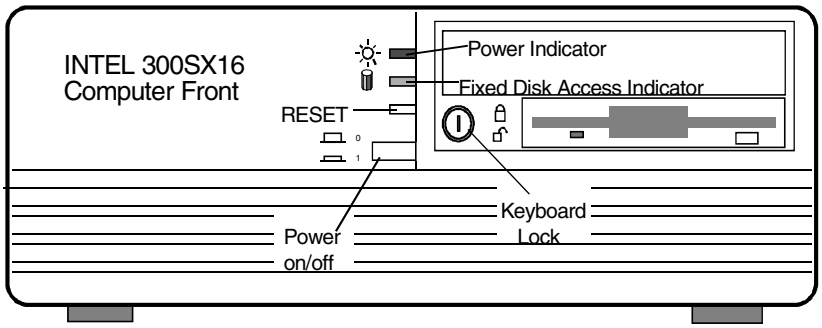



**Figure 2.2-2**

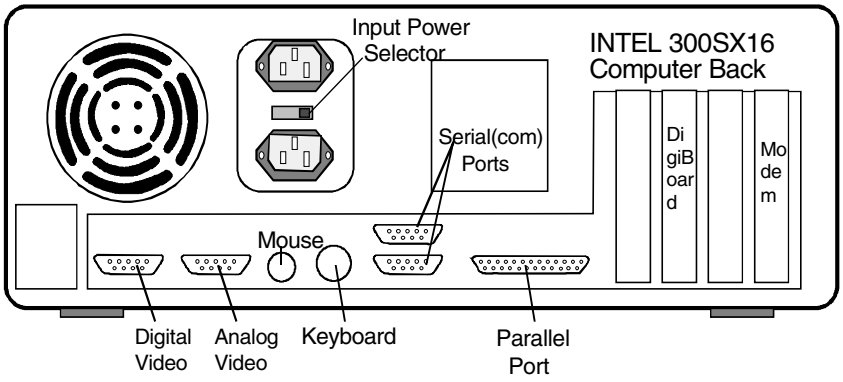
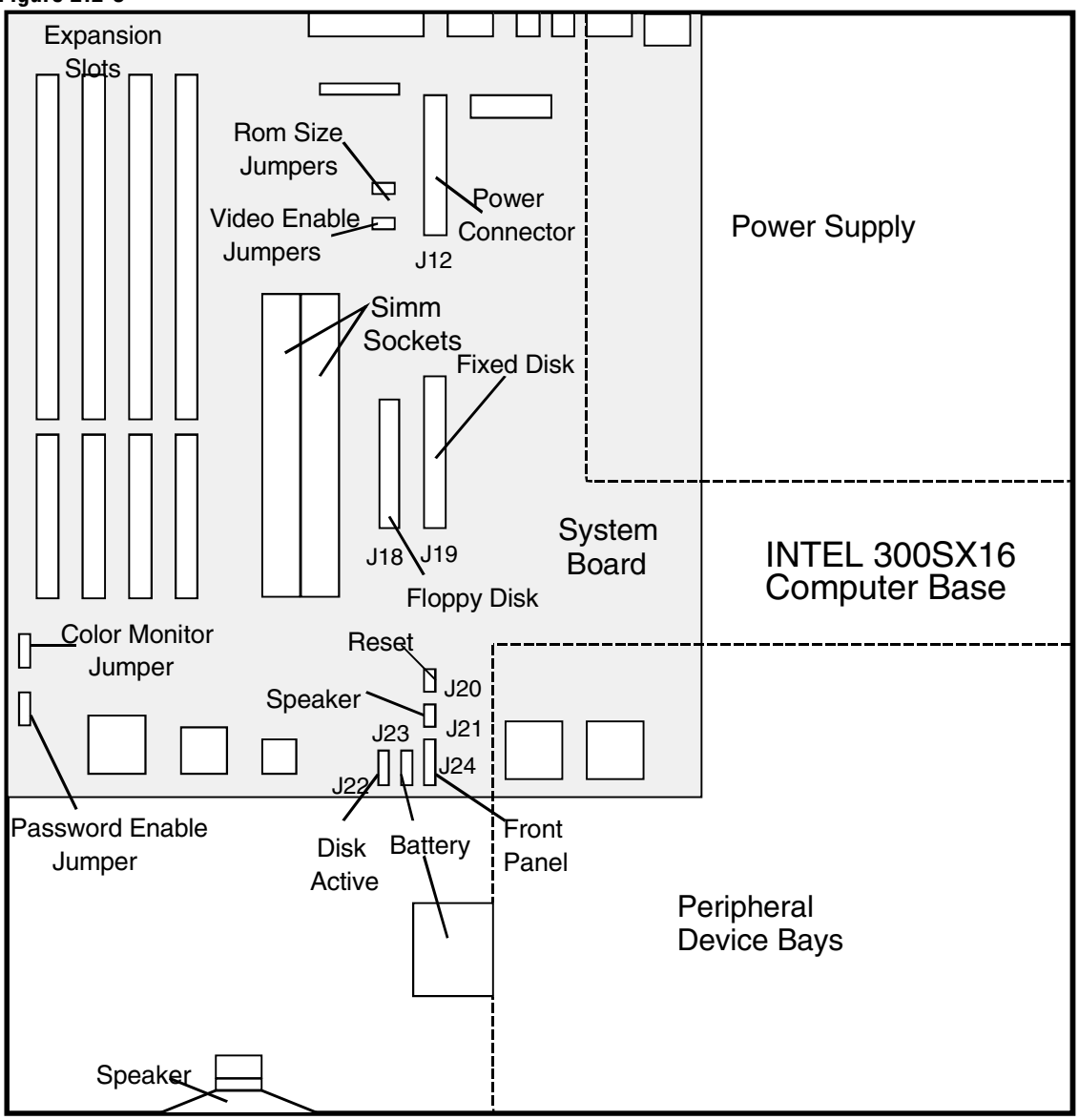


**Figure 2.2-3**


Expansion Slots
Rom Size Jumpers
Video Enable Jumpers
Power Connector
J12
Power Supply
Simm Sockets
Fixed Disk
J18
J19
Floppy Disk
System Board
INTEL 300SX16 Computer Base
Color Monitor Jumper
Reset
J20
Speaker
J21
J23
J24
J22
Password Enable Jumper
Disk Active
Battery
Front Panel
Peripheral Device Bays
Speaker

## STKS™ Analyzer, MAXM™ Analyzer 300SX-16 CMOS Setup

*Phoenix Technologies Ltd.*
*System Configuration Setup V4.02*

*Time:*** CURRENT TIME****
*Date: ***CURRENT DATE****

| | |
|---|---|
| *Diskette A:* | *5 Inch, 2.4 MB* |
| *Diskette B:* | *Not Installed* |
| *Hard Disk C:* | *Type (SEE NOTE BELOW)* |
| *Hard Disk D:* | *Not Installed* |
| *Base Memory:* | *640 KB* |
| *Extended Memory:* | *3072 KB* |
| *Display:* | *EGA/VGA* |
| *Keyboard:* | *Installed* |
| *CPU Speed:* | *Turbo* |
| *Coprocessor:* | *Installed* |

*PgDn for advanced options. Up/Down Arrow to select.*
*Left/Right Arrow to change.*

*F10 to exit and save changes. Esc to reboot for changes to take effect.*

**NOTES:**

To enter the **CMOS Setup**, press Ctrl+Alt+Insert simultaneously after memory check and before DMS AUTOEXEC.BAT starts.

| | CYL | HD | PRE | LZ | SEC | SIZE | |
|---|---|---|---|---|---|---|---|
| **Type 33** | 965 | 5 | -1 | 1 | 17 | 40 | |
| **Type 48** | 751 | 8 | -1 | 1 | 17 | 49 | |
| **Type 49** | 723 | 13 | 0 | 0 | 51 | 234 | |
| **Type 48** | 1011 | 15 | 0 | 1011 | 44 | 325 | |
| **Type 48** | 1024 | 16 | 0 | 1023 | 63 | 504 | (850MB and Higher) |

*Phoenix Technologies Ltd.*
*Additional Options*
*Time:*** CURRENT TIME****
*Date: ***CURRENT DATE****

| | |
|---|---|
| *Enter SETUP:* | *Always* |
| *Speaker:* | *Enabled* |
| *On-board Video Display:* | *Primary* |
| *On-board Video Controller:* | *Auto* |
| *Monochrome Startup Mode:* | *Color Mode (3+)* |
| *Video Timing Register Lock:* | *Normal* |
| *Monitor Type:* | *VGA Display* |
| *On-board Video BIOS Mapping:* | *To E00000H* |
| *On-board peripherals:* | *On-board floppy & Winchester Enabled* |
| *Password:* | *Not Installed* |
| *Parallel Port:* | *LPT1* |
| *Serial Port 1:* | *COM1* |
| *Serial Port 2:* | *COM2* |
| *Console Redirection to COM1:* | *Disabled COM2: Disabled* |

PgUp for main menu and PgDn for additional options.
Up/Down Arrow to select. Left/Right arrow to change.
F10 to exit and save changes. Esc to reboot for changes to take effect.

*Phoenix Technologies Ltd.*
*Additional Options*
*Time:*** CURRENT TIME****
*Date: ***CURRENT DATE****

| | |
|---|---|
| *Shadow BIOS ROM:* | *Disabled* |
| *User Definable Drive Types:* | *48 and 49* |
| *Base Memory above 512K:* | *Enabled* |
| *Off-board Video shadow:* | *Disabled* |
| *Memory Roll:* | *Disabled* |

PgUp for main menu and PgDn for additional options.
Up/Down Arrow to select. Left/Right arrow to change.
F10 to exit and save changes. Esc to reboot for changes to take effect.

## STKS™ Analyzer, MAXM™ Analyzer 300SX-16 Jumper Configuration

**Table 2.2-1 STKS™ Analyzer, MAXM™ Analyzer 300SX-16 Jumper Configuration**

| Jumper Connected | Description |
|---|---|
| E1 TO E2 | Memory size - **512** or 256 ROM size |
| E7 TO E8 | Video ON/OFF - ON Video **ENABLED** or DISABLED |
| E10 TO E11 | Monitor - **COLOR** or MONOCHROME |
| E14 TO E15 | PASSWORD ON or **OFF** |

## Expansion Slots

**Table 2.2-2 STKS™ Analyzer, MAXM™ Analyzer 300SX-16 Expansion Slot Configuration**

| | |
|---|---|
| Expansion Slot #1: | Modem (115 Volts only) |
| Expansion Slot #2: | Spare |
| Expansion Slot #3: | Digiboard Rev (H, I, J, K, L, M, N) only with daughter board Rev (I or J) |
| Expansion Slot #4: | Spare |

## 2.3 STKS™ Analyzer, MAXM™ Analyzer 300SX-20

**Figure 2.3-1**

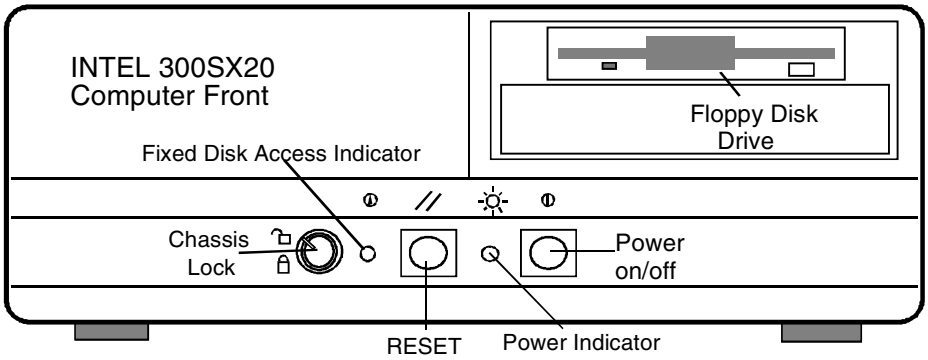



**Figure 2.3-2**

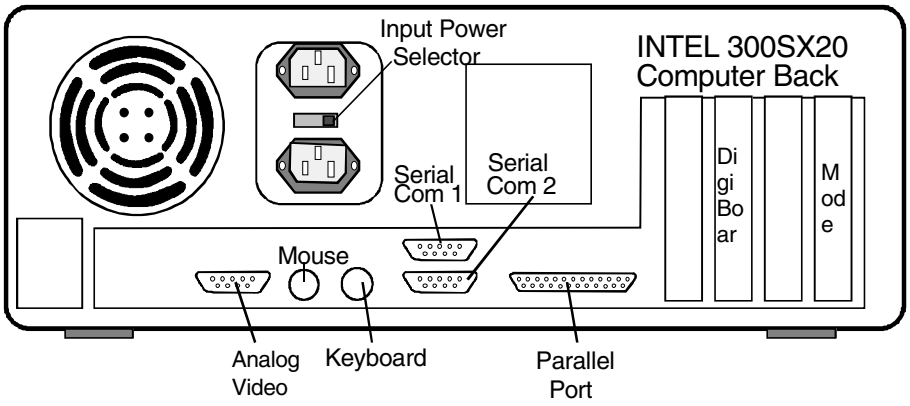
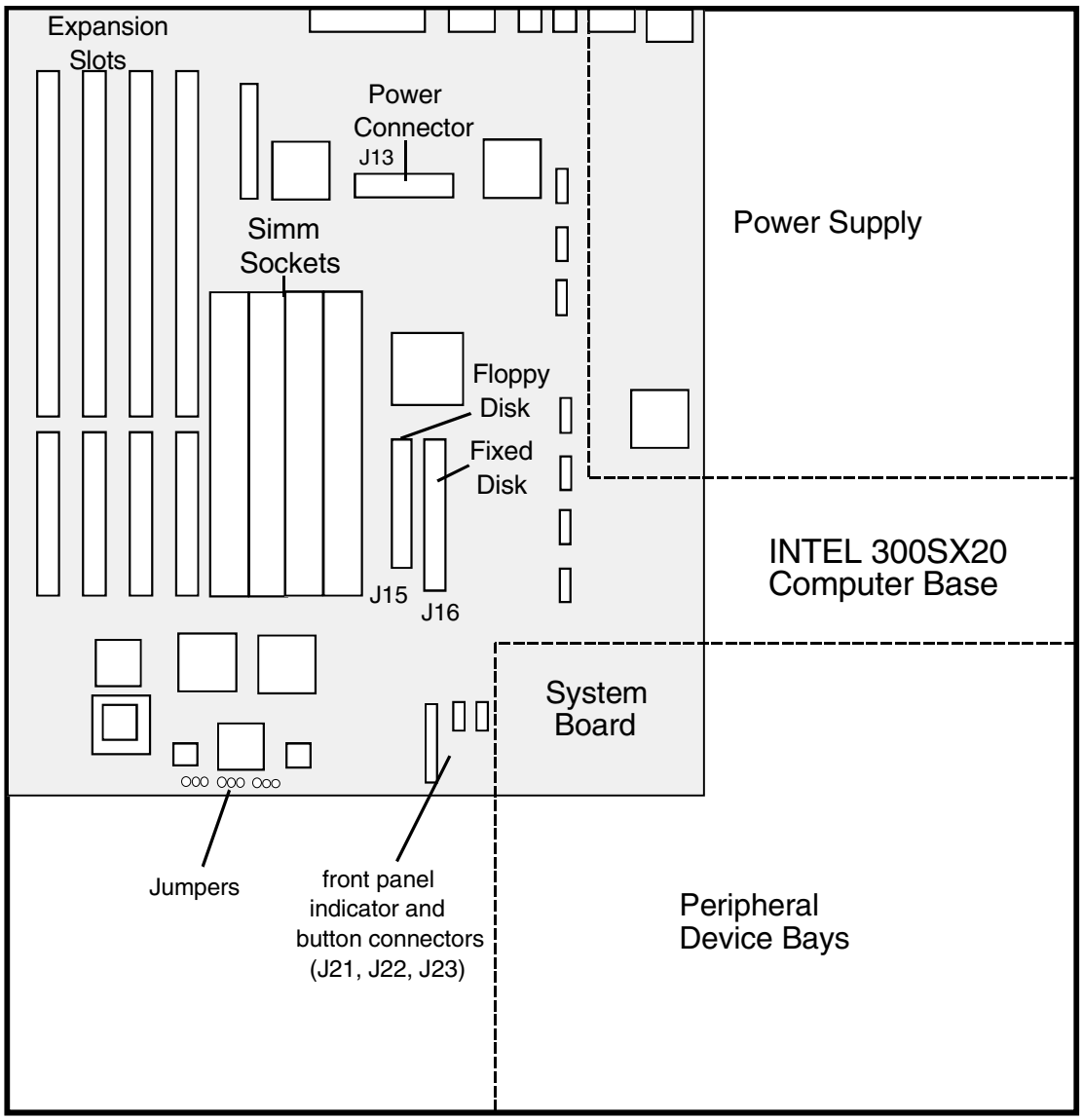


**Figure 2.3-3**


Expansion Slots
Power Connector
J13
Simm Sockets
Power Supply
Floppy Disk
Fixed Disk
J15
J16
INTEL 300SX20 Computer Base
System Board
Jumpers
front panel indicator and button connectors (J21, J22, J23)
Peripheral Device Bays

## STKS™ Analyzer, MAXM™ Analyzer 300SX-20 CMOS Setup

*Page 1 of 4*

| | |
|---|---|
| *System Time: ***SET TIME**** | *NumLock on at boot: YES* |
| *System Date: *** SET DATE**** | |
| *Diskette A:* | *3.5 Inch, 1.44MB* |
| *Diskette B:* | *Not Installed* |
| *Hard Disk 1:* | *Type (SEE NOTE BELOW)* |
| *Hard Disk 2:* | *Not Installed* |
| *Base Memory:* | *640KB* |
| *Extended Memory:* | *3072KB* |
| *Video Display:* | *VGA/EGA* |
| *Keyboard:* | *Installed* |
| *CPU Speed:* | *Fast* |

NOTE:

To enter the **CMOS Setup**, reboot the 300SX-20 by pressing the front panel reset button. Once you see the "*Keyboard Test....PASSED*" message during the Power On Self Test, **press and hold the** Alt key until the message "*QEMM 386: Press <ESC> to unload QEMM or any key to continue with QEMM...*" appears. At this point, **release the** Alt **key and press** Ctrl+Alt+Insert simultaneously to enter the SETUP program.

.

| | CYL | HD | PRE | LZ | SEC | SIZE | |
|---|---|---|---|---|---|---|---|
| **Type 33** | 965 | 5 | -1 | 1 | 17 | 40 | |
| **Type 48** | 751 | 8 | -1 | 1 | 17 | 49 | |
| **Type 49** | 723 | 13 | 0 | 0 | 51 | 234 | |
| **Type 48** | 1011 | 15 | 0 | 1011 | 44 | 325 | |
| **Type 48** | 1024 | 16 | 0 | 1023 | 63 | 504 | (850MB and Higher) |

**Table 2.3-1 300SX20 Setup,** Page 2 of 4

| | |
|---|---|
| *Enter SETUP:* | ***Always*** |
| *Speaker:* | ***Enabled*** |
| *On-board Video Controller:* | ***Primary*** *(This line will be displayed with BIOS VER 1.10.32 LO only)* |
| *Monochrome Startup Mode:* | ***All Video Modes*** |
| *Monitor Type:* | ***Other*** |
| *Cache Control:* | ***All*** |

**Table 2.3-1 300SX20 Setup,** Page 2 of 4 *(Continued)*

| | |
|---|---|
| *VESA Feature Connector:* | ***Disabled*** |
| *On-board Peripherals* | ***Onboard floppy and fixed drive enabled*** |
| *Password:* | ***Not installed.*** *Depress + or - to enter.* |

**Table 2.3-2 300SX20 Setup,** Page 3 of 4

| | |
|---|---|
| *Base Memory Above 512K:* | ***Enabled*** |
| *Mouse Interrupt:* | ***Disabled*** |
| *Parallel Port:* | ***Base Address 378H: Compatible*** |
| *Serial Port:* | ***Enabled*** |
| *Serial Port:* | ***Enabled*** |
| *Console Redirection to Serial Port 1:* | ***Disabled*** |
| *Console Redirection to Serial Port 2:* | ***Disabled*** |

**Table 2.3-3 300SX20 Setup,** Page 4 of 4

| | |
|---|---|
| *Memory Roll:* | ***Disabled*** |
| *User Definable Drive Types:* | ***48 and 49*** |
| *Shadow System BIOS:* | ***Disabled*** |
| *Shadow Onboard Video Bios:* | ***Disabled*** |
| *On-board Video Bios Mapping:* | ***To E000H*** |
| *Shadow C0000 To C3FFF:* | ***Disabled*** |
| *Shadow C4000 To C7FFF:* | ***Disabled*** |
| *Shadow C8000 To CBFFF:* | ***Disabled*** |
| *Shadow CC000 To CFFFF:* | ***Disabled*** |
| *Shadow D0000 To D3FFF:* | ***Disabled*** |
| *Shadow D4000 To D7FFF:* | ***Disabled*** |
| *Shadow D8000 to DBFFF:* | ***Disabled*** |
| *Shadow DC000 to CFFFF:* | ***Disabled*** |

## STKS™ Analyzer, MAXM™ Analyzer 300SX-20 Jumper Configuration

**Table 2.3-4 300SX-20 Jumper Configuration**

| Jumper Name | Jumper Connected | Description |
|---|---|---|
| J25 | 1 To 2 | Password - **CLEAR**/ENABLE |
| J26 | 1 To 2 | VIDEO - **ENABLE**/DISABLE |
| J27 | 2 To 3 | CMOS - **KEEP**/CLEAR |

## Expansion Slots

**Table 2.3-5 300SX-20 Expansion Slot Configuration**

| | |
|---|---|
| Expansion Slot # 1: | Modem (115 Volts only) |
| Expansion Slot # 2: | Spare |
| Expansion Slot # 3: | Digiboard Rev (H, I, J, K, L, M, N) only with daughter board Rev (I or J) |
| Expansion Slot # 4: | Serial/Parallel board |

## 2.4 STKS™ Analyzer, MAXM™ Analyzer 486DX33 Classic R

**Figure 2.4-1**

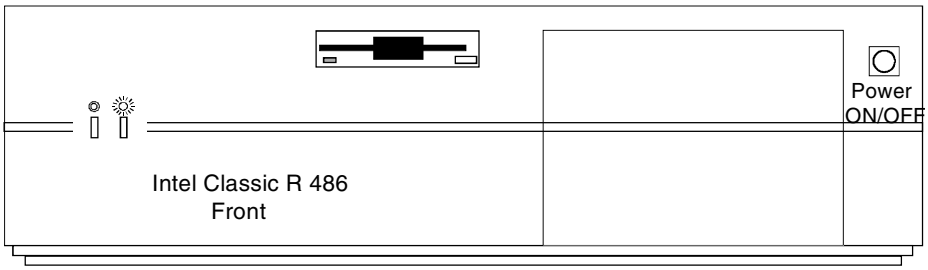



**Figure 2.4-2**

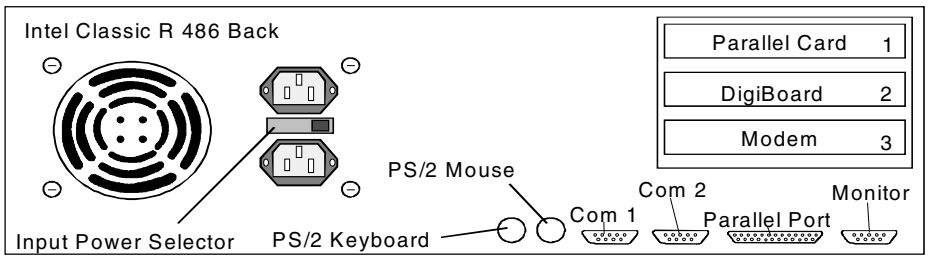
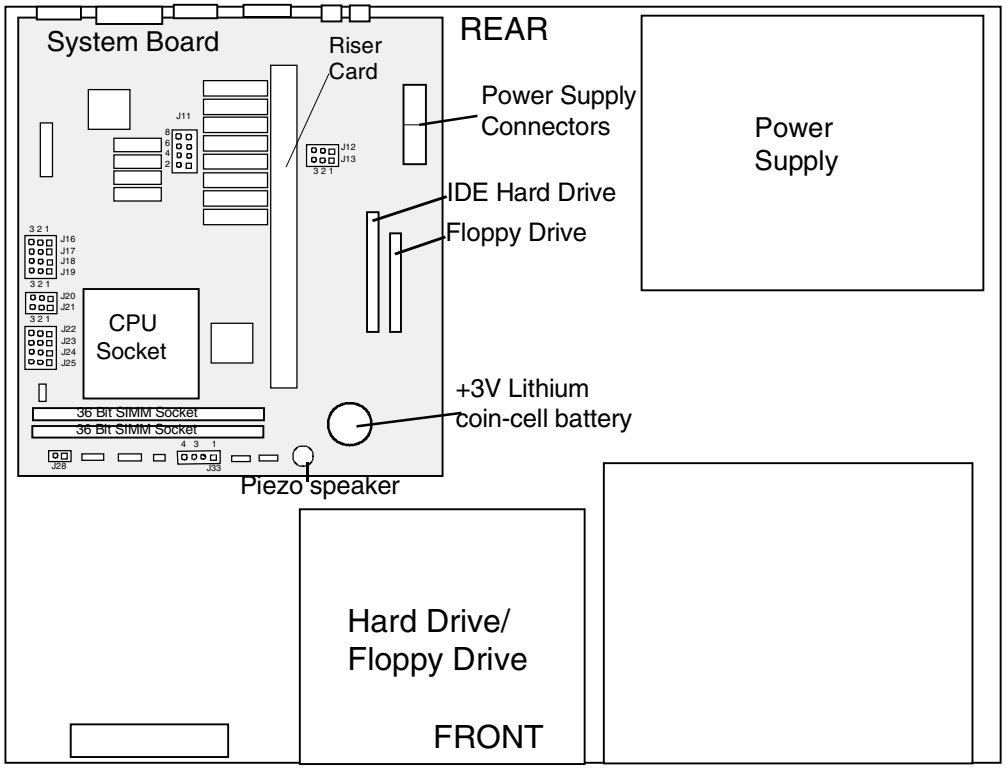



**Figure 2.4-3**



## STKS™ Analyzer, MAXM™ Analyzer 486DX33 Classic R CMOS Setup

To acces CMOS Setup, re-boot the computer. When XXX counts down to 135, press F1 immediately.

*Page 1 of 3*

*Time: **hh:mm:ss***

*Date: **dd:mm:yy***

**Table 2.4-1 486DX33 Classic R CMOS Setup - Hard Drive Setup, Page 1 of 3**

| | |
|---|---|
| *Onboard Diskette:* | ***Enable*** |
| *Diskette A:* | ***3.5", 1.44MB*** |
| *Diskette B:* | ***Not Installed*** |
| *Onboard IDE:* | ***Enabled*** |
| *Hard Drive 1:* | *(go to next table)* |

**Table 2.4-2 486DX33 Classic R CMOS Setup - Hard Drive Setup, Page 1 of 3 - continued**

| TYPE | CYL | HD | PRE | LZ | SEC | SIZE | |
|---|---|---|---|---|---|---|---|
| Type 19 | 723 | 13 | 0 | 0 | 51 | 234 | |
| Type 2 | 1011 | 15 | 0 | 1011 | 44 | 325 | IF (LPS304 MB) |
| Type 3 | 1024 | 16 | 0 | 1023 | 63 | 504 | IF (850 MB or Larger) |
| User Definable Drives: | | | | 2 & 3 | | | |

**Table 2.4-3 486DX33 Classic R CMOS Setup, Page 1 of 3 - continued**

| | |
|---|---|
| *Hard Drive 2:* | ***Not Installed*** |
| *Boot Device:* | ***Diskette or Hard Drive*** |
| *Post Memory Test Prompt:* | ***Enabled*** |
| *POST Setup Prompt:* | ***Disabled*** |
| *Scan FLASH User Area:* | ***Disabled*** |
| *Speaker:* | ***Enabled*** |
| *Onboard Mouse:* | ***Disabled*** |
| *Keyboard* | ***Installed*** |
| *Numlock on at boot:* | ***Yes*** |
| *Password:* | ***Not Installed*** |

**Table 2.4-4 486DX33 Classic R CMOS Setup, Page 1 of 3 - continued**

| | |
|---|---|
| *Base Memory Above 512K:* | ***Enabled*** |
| *Parallel Port Address 378H:* | ***Compatible/IRQ7*** |
| *Parallel Port Interrupt:* | ***Enabled*** |
| *Serial Port 1:* | ***Enabled*** |
| *Serial Port 2:* | ***Enabled*** |
| *Video Type:* | ***VGA/EGA*** |
| *Video Horizontal Refresh:* | ***31.5 - 64.0 kHz*** |
| *640 X 480(VGA)Vertical Refresh:* | ***60 or 72 Hz*** |
| *800 X 600 Vertical Refresh:* | ***72 Hz*** |
| *1024 X 768 Vertical Refresh:* | ***72 Hz Non-Interlaced*** |
| *1280 X 1024 Vertical Refresh:* | ***43.5 Hz Interlaced*** |
| *VGA Mode Refresh Rate* | ***60 Hz*** |
| *On-board Video BIOS Mapping* | ***To E0000H*** |

**Table 2.4-5 486DX33 Classic R CMOS Setup, Page 3 of 3**

| | |
|---|---|
| *CPU Speed:* | ***Fast*** |
| *Cache:* | ***Enabled*** |
| *Refresh Mode:* | ***Synchronous*** |
| *Shadow C0000 to C3FFF:* | ***Disabled*** |
| *Shadow C4000 to C7FFF:* | ***Disabled*** |
| *Shadow C8000 to CBFFF:* | ***Disabled*** |
| *Shadow CC000 to CFFFF:* | ***Disabled*** |
| *Shadow D0000 to D3FFF:* | ***Disabled*** |
| *Shadow D4000 to C7FFF:* | ***Disabled*** |
| *Shadow D8000 to DBFFF:* | ***Disabled*** |
| *Shadow DC000 to DFFFF:* | ***Disabled*** |

**Table 2.4-6 486DX33 Classic R Expansion Slots**

| | |
|---|---|
| Expansion Slot #1: | Serial/Parallel (if needed) |
| Expansion Slot #2 | Digiboard Rev (H, I, J, K, L, M, N) only with daughter board Rev (I or J) |
| Expansion Slot #3 | Modem (115 Volts only) |

## STKS™ Analyzer, MAXM™ Analyzer 486DX33 Classic R Jumper Configuration

**Table 2.4-7 486DX33 Classic R Jumper Configuration for Motherboards PBA-612478-001 and PBA 612478-002**

| Jumper Name | Jumper Connected | Description |
|---|---|---|
| J11 | 1&2, 3&4, 7&8 | SECONDARY CACHE MEMORY: OK |
| J12 | 1&2 | FLASH WRITE: ENABLED |
| J13 | 1&2 | BOOT BLOCK: NORMAL |
| J16 | 1&2 | LOCAL VIDEO: ENABLED |
| J17 | 1&2 | FLOPPY WRITE PROTECT: DISABLED |
| J18 | 1&2 | CPU CLOCK SPEED: 33MHZ |
| J19 | 2&3 | CPU CLOCK SPEED: 33MHZ |
| J20 | 1&2 | PASSWORD CLEAR: ENABLED |
| J21 | 1&2 | CMOS SETUP: ENABLED |
| J22 | 2&3 | CPU CONFIGURATION: i486dX33 |
| J23 | 1&2 | CPU CONFIGURATION: i486dX33 |
| J24 | 1&2 | CPU CONFIGURATION: i486dX33 |
| J25 | 2&3 | CPU CONFIGURATION: i486dX33 |
| J28 | 1&2 | CMOS CLEAR: NORMAL |
| J33 | 3&4 | SPEAKER SELECT: ON-BOARD |

**Table 2.4-8 486DX33 Classic R Jumper Configuration for Motherboards - AA-612478-003, AA-612478-004, AA-612478-008, *AA-612478-009, AA-612478-102, AA-612478-103, *AA-627111-001**

| Jumper Name | Jumper Connected | Description |
|---|---|---|
| J11 | 1&2, 3&4, 7&8 | SECONDARY CACHE MEMORY: OK |
| J12 | 1&2 | FLASH WRITE: ENABLED |
| J13 | 1&2 | BOOT BLOCK: NORMAL |
| J16 | 1&2 | LOCAL VIDEO: ENABLED |
| J17 | 1&2 | FLOPPY WRITE PROTECT: DISABLED |
| J18 | 1&2 | CPU CLOCK SPEED: 33MHZ |
| J19 | 2&3 | CPU CLOCK SPEED: 33MHZ |
| J20 | 1&2 | PASSWORD CLEAR: ENABLED |
| J21 | 1&2 | CMOS SETUP: ENABLED |
| J22 | 2&3 | CPU CONFIGURATION: i486dX33 |
| J23 | 1&2 | CPU CONFIGURATION: i486dX33 |
| J24 | 1&2 | CPU CONFIGURATION: i486dX33 |
| J25 | 1&2 | CPU CONFIGURATION: i486dX33 |
| J28 | 1&2 | CMOS CLEAR: NORMAL |
| J33 | 3&4 | SPEAKER SELECT: ON-BOARD |

NOTES: The only difference between the motherboards jumper configurations is the jumper connected for J25.

* These two motherboards are the same, but they could be received in PRODUCTION under two different (AA) numbers.

## 2.5 STKS™ Analyzer, MAXM™ Analyzer NEC 486DX33

**Figure 2.5-1**

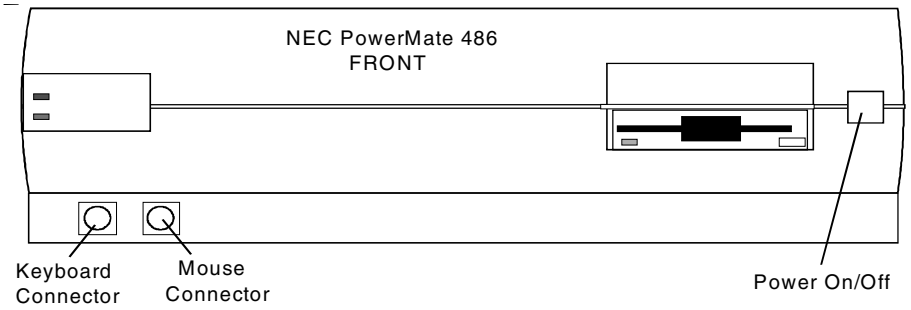



**Figure 2.5-2**

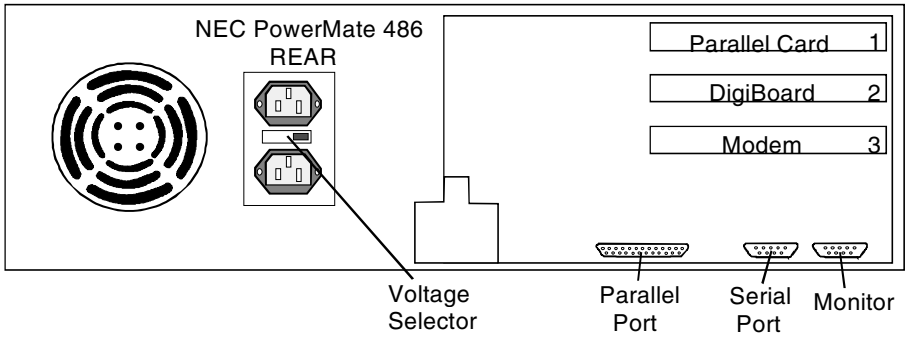
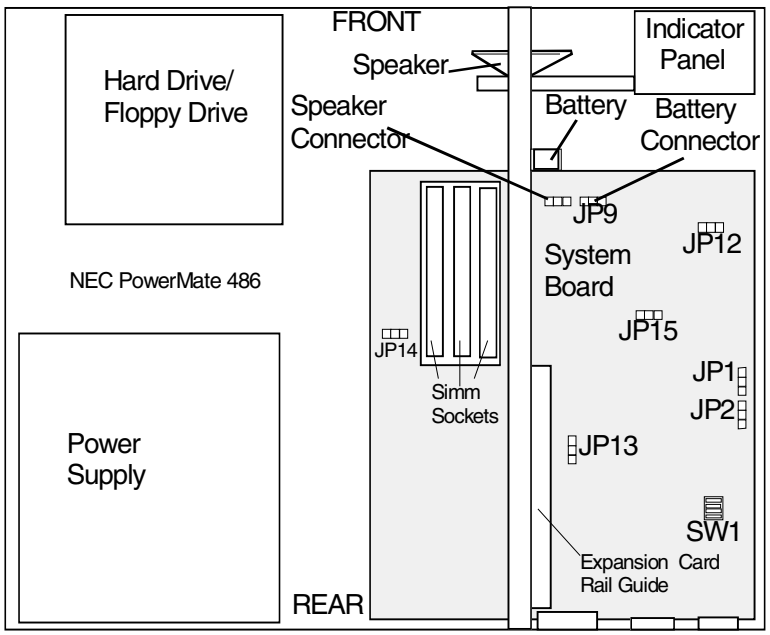



**Figure 2.5-3**



## STKS™ Analyzer, MAXM™ Analyzer NEC 486DX33 CMOS SETUP

Enter CMOS SETUP:

When the flashing cursor( _ ) changes to a flashing box ( ■ ), select F1.

**Table 2.5-1 NEC 486DX33 CMOS Setup**

NEC 486DX33 CMOS Setup
Communications Settings
*Comms*

| | | |
|---|---|---|
| *Serial Port:* | *[3F8h - 3FFh / IRQ4* | [ ] |
| *Parallel Port:* | *[378h - 37Fh / IRQ 7* | [ ] |

Press <Alt> + < > to list choices - <Tab> to get to Next Field

Drive Settings
*Drives*

| | | |
|---|---|---|
| *Diskette Drive A:* | *[1.44MB - 3.5”* | [ ] |
| *Diskette Drive B:* | *[Not Installed* | [ ] |
| *Hard Disk Drive 1:* | *[BIOS Defined type 28* | [ ] |
| *Hard Disk Drive 2:* | *[Not Installed* | [] |
| *Initial Boot Drive:* | *[Diskette Drive A* | [ ] |
| *Boot Messages:* | *[Display Messages* | [ ] |
| *Diskette Drive Access:* | *[Read/Write Access* | [ ] |
| *Built in IDE Controller:* | *[Enable* | [ ] |

*Press <Alt> + < > to list choices - <Tab> to get to Next Field*

Keyboard Settings
*Keyboard*

| | | |
|---|---|---|
| *Typematic Rate:* | *[Maximum* | [ ] |
| *NumLock Boot Status:* | *[NumLock On* | [ ] |
| *Boot Messages:* | *[Display Messages* | [ ] |
| *System Password:* | *[Disable* | [ ] |

*Press <Alt> + < > to list choices - <Tab> to get to Next Field*

Performance Options
*Performance*

| | | |
|---|---|---|
| *Keyboard Reset Emulation* | *[Enable* | [ ] |

**Table 2.5-1 NEC 486DX33 CMOS Setup**

| | | |
|---|---|---|
| *Shadow Video BIOS* | *[Enable* | [ ] |

*Press <Alt> = < > to list choices - <Tab> to get to Next Field*

Time and Date Settings
*Time/Date*

| | |
|---|---|
| ***Time:*** | *XX:XX:XX* |
| ***Date:*** | *XX:XX:XXXX* |
| *Enter New Value* | *<Tab> to get to Next Field* |

NOTE:
1 Enter Date in the following format MM/DD/YYYY

Video Settings
*Video*

| | | |
|---|---|---|
| *Monitor Type* | *[Color* | [ ] |
| *Boot Messages:* | *[Display Messages* | [ ] |

*Press <Alt> + < > to list choices -<Tab> to get to Next Field*

**Table 2.5-2 NEC 486DX33 CMOS Setup NEC 486DX33 CMOS Setup**

Auto Setup Summary

*Exit Comms Drives Keyboard Performance Time/Date*
*Video About*

| | |
|---|---|
| *System RAM:* | *8.0 MB* |
| *Base RAM:* | *640 KB* |
| *Current Extended RAM:* | *7.00 MB* |
| *Previous Extended RAM:* | *7.00 MB* |
| *Video Controller:* | *Built-In VGA* |
| *Math Coprocessor* | *Installed* |
| *Diskette Drive A:* | *1.44 MB - 3.5”* |
| *Diskette Drive B:* | *Not Installed* |
| *Hard Disk Drive 1:* | *BIOS Defined Type 31* |
| *Hard Disk Drive 2:* | *Not Installed* |

*To open a window, press <Alt> = the highlighted character key: i.e., <Alt> + X to EXIT*

## STKS™ Analyzer, MAXM™ Analyzer NEC 486DX33 Jumper Configuration

**Table 2.5-3 NECDX33 Jumper Configuration**

| Jumper Name | Jumper Connected | Description |
|---|---|---|
| | | |
| JP1 | 1&2 | 486DX33 SELECTION |
| JP2 | 1&2 | 486DX33 SELECTION |
| JP12 | NOT INSTALLED | 487SX COPROCESSOR, (NOT INSTALLED) |
| JP13 | 1&2 | PRINTER PORT IRQ7 SELECTED |
| JP14 | 1&2 | NETWORK BIOS UPDATE (OFF) |
| JP15 | 1&2 | SYSTEM CLOCK SPEED (33 MHz) |
| SW1-1 | OFF | BUILT IN VIDEO CONTROLLER ENABLED |
| SW1-2 | OFF | BUILT IN FLOPY DISK CONTROLLER ENABLED |
| SW1-3 | ON | PASSWORD ENABLED OR DISABLED |
| SW1-4 | OFF | BIOS REPROGRAM FLASH (ALLOW) |

## Expansion Slots

**Table 2.5-4 Expansion Slots**

| | |
|---|---|
| Expansion Slot #1 | Serial/Parallel (If needed) |
| Expansion Slot #2 | Digiboard Motherboard Rev (H,I,J,K,L,M,N) with Daughter board Rev (I or J) only |
| Expansion Slot # 3 | Modem (115Volts only) |

## 2.6 STKS™ Analyzer, MAXM™ Analyzer Intel® 486DX2-66 Classic R Plus

**Figure 2.6-1**

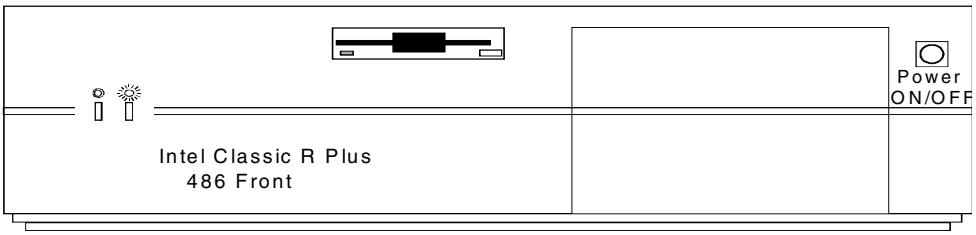



**Figure 2.6-2**

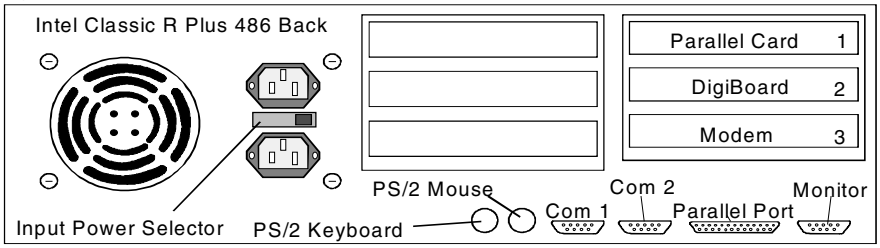
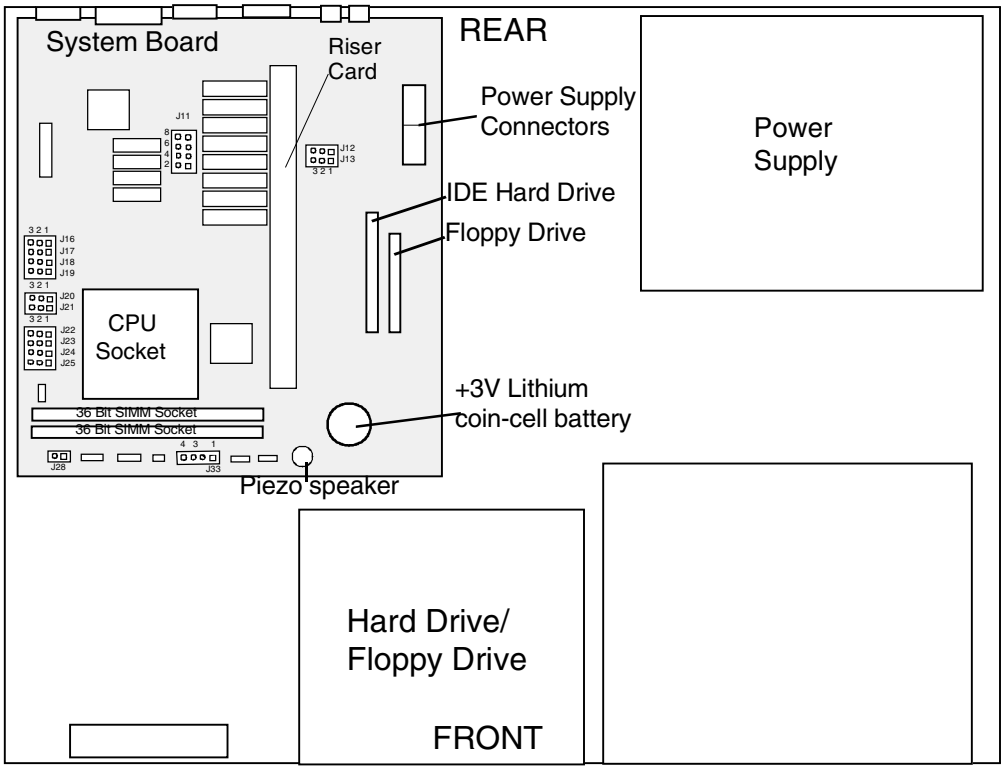



**Figure 2.6-3**



## STKS™ Analyzer, MAXM™ Analyzer Intel® 486DX2-66 Classic R Plus CMOS Setup

To access **CMOS Setup**, re-boot the computer. When XXX counts down to 135, select F1 immediately.

**Table 2.6-1 Intel® Classic R Plus CMOS Setup, *Page 1 of 3***

| | |
|---|---|
| *Time:* | ***hh:mm:ss*** |
| *Date:* | ***DD:MM:YYYY*** |
| | |
| *On-board Diskette:* | ***Enable*** |
| *Diskette A:* | ***3.5",1.44 MB*** |
| *Diskette B:* | ***Not Installed*** |
| *On-board IDE:* | ***Enabled*** |
| *Hard Drive 1:* | ***See Table below*** |

**Table 2.6-2 Intel® Classic R Plus Drives**

| *TYPE* | *CYL* | *HD* | *PRE* | *LZ* | *SEC* | *SIZE* | |
|---|---|---|---|---|---|---|---|
| *Type 19* | *723* | *13* | *0* | *0* | *51* | *234* | |
| *Type 2* | *1011* | *15* | *0* | *1011* | *44* | *325* | *If (LPS 340 MB)* |
| *Type 3* | *1024* | *16* | *0* | *1023* | *63* | *504* | *If (850 MB or Larger)* |
| *User Definable Drives* | | | | *2 & 3* | | | |

**Table 2.6-3 Intel® Classic R Plus CMOS Setup, *Page 1 of 3* - continued**

| | |
|---|---|
| *Hard Drive 2:* | ***Not Installed*** |
| *Boot Device:* | ***Diskette or Hard Drive*** |
| *Post Memory Test Prompt:* | ***Enabled*** |
| *POST Setup Prompt:* | ***Disabled*** |
| *Scan FLASH User Area:* | ***Disabled*** |
| *Speaker:* | ***Enabled*** |
| *On-board Mouse:* | ***Disabled*** |
| *Keyboard:* | ***Installed*** |
| *NumLock on at boot:* | ***Yes*** |
| *Password:* | ***Not Installed*** |

**Table 2.6-4 Intel® Classic R Plus CMOS Setup, *Page 2 of 3***

| | |
|---|---|
| *Base Memory:* | ***640KB*** |
| *Extended Memory* | ***7168KB*** |
| *Base Memory Above 512K* | ***Enabled*** |
| *Parallel Port: Address 378H:* | ***Compatible/IRQ7*** |
| *Parallel Port Interrupt* | ***Enabled*** |
| *Serial Port 1:* | ***Enabled*** |
| *Serial Port 2:* | ***Enabled*** |
| *Video Type;* | ***VGA/EGA*** |
| *Video Horizontal Refresh:* | ***31.5 - 64.0 KHz*** |
| *640 X 480 (VGA) Vert Refresh:* | ***60 or 72 Hz*** |
| *800 X 600 Vertical Refresh:* | ***72 Hz*** |
| *1024 X 768 Vertical Refresh:* | ***72 Hz Non-Interlaced*** |
| *1280 X 1024 Vertical Refresh:* | ***43.5 Hz Interlaced*** |
| *VGA Mode Refresh Rate:* | ***60 Hz*** |
| *On-board Video BIOS Mapping:* | ***To E0000H*** |

**Table 2.6-5 Intel® Classic R Plus CMOS Setup, *Page 3 of 3***

| | |
|---|---|
| *CPU Speed:* | ***Fast*** |
| *Cache:* | ***Enabled*** |
| *Refresh Mode* | ***Synchronous*** |
| *Shadow C0000 to C3FFF* | ***Disabled*** |
| *Shadow C4000 to C7FFF* | ***Disabled*** |
| *Shadow C8000 to CBFFF* | ***Disabled*** |
| *Shadow CC000 to CFFFF* | ***Disabled*** |
| *Shadow D0000 to D3FFF* | ***Disabled*** |
| *Shadow D4000 to C7FFF* | ***Disabled*** |
| *Shadow D8000 to DBFFF* | ***Disabled*** |
| *Shadow DC000 to DFFFF* | ***Disabled*** |

## STKS™ Analyzer/MAXM™ Analyzer Intel® 486DX2-66 Classic R Plus Jumper Configuration

**Table 2.6-6 Intel® Classic R Plus Jumper Settings**

| JUMPER SETTINGS FOR MOTHERBOARDS PBA-615293-103, AA-615535-103 | | |
|---|---|---|
| | | |
| JUMPER NAME | JUMPER CONNECTED | DESCRIPTION |
| J11 | 1&2, 3&4, 7&8 | SECONDARY CACHE MEMORY: ***OK*** |
| J12 | 1&2 | FLASH WRITE: **ENABLED** |
| J13 | 1&2 | BOOT BLOCK: **NORMAL** |
| J16 | 1&2 | LOCAL VIDEO: **ENABLED** |
| J17 | 1&2 | FLOPPY WRITE PROTECT: **DISABLED** |
| J18 | 1&2 | CPU CLOCK SPEED: **33MHz** |
| J19 | | CPU CLOCK SPEED: **33MHz** |
| J20 | 1&2 | PASSWORD CLEAR: **DISABLED** |
| J21 | 1&2 | CMOS SETUP: **ENABLED** |
| J22 | 2&3 | CPU CONFIGURATION: **i486DX2-66** |
| J23 | 1&2 | CPU CONFIGURATION: **i486DX2-66** |
| J24 | 1&2 | CPU CONFIGURATION: **i486DX2-66** |
| J25 | 1&2 | CPU CONFIGURATION: **i486DX2-66** |
| J28 | 1&2 | CMOS CLEAR: **NORMAL** |
| J33 | 3&4 | SPEAKER SELECT: **ON-BOARD** |

## Expansion Slots

**Table 2.6-7 Intel® Classic R Plus Expansion Slots**

| | |
|---|---|
| Expansion Slot # 1 | Serial/Parallel (If needed) |
| Expansion Slot # 2 | Digiboard Motherboard Rev (H,I,J,K,L,M,N) with Daughter board Rev (I or J) only |
| Expansion Slot # 3 | Modem (115 Volts only) |
| Expansion Slot # 4 | Spare (8 bit boards only) |
| Expansion Slot # 5 | Spare (8 bit boards only) |

## 2.7 STKS™ Analyzer, MAXM ™ Analyzer RadiSys 100MHz, 166MHz PENTIUM COMPUTER

**Figure 2.7-1**

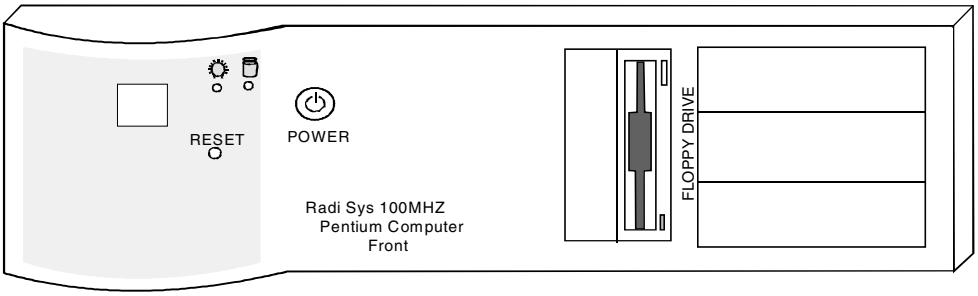



**Figure 2.7-2**

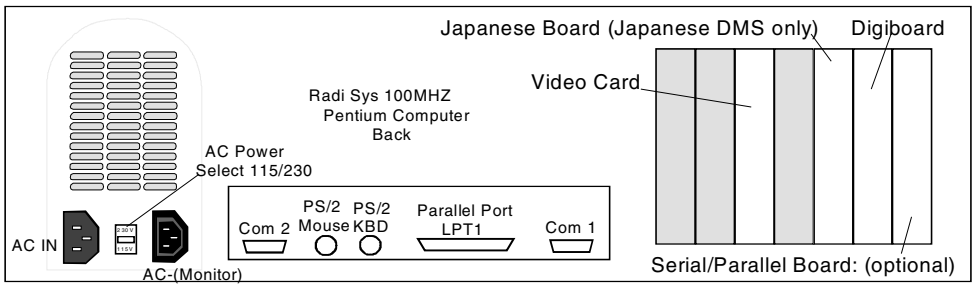
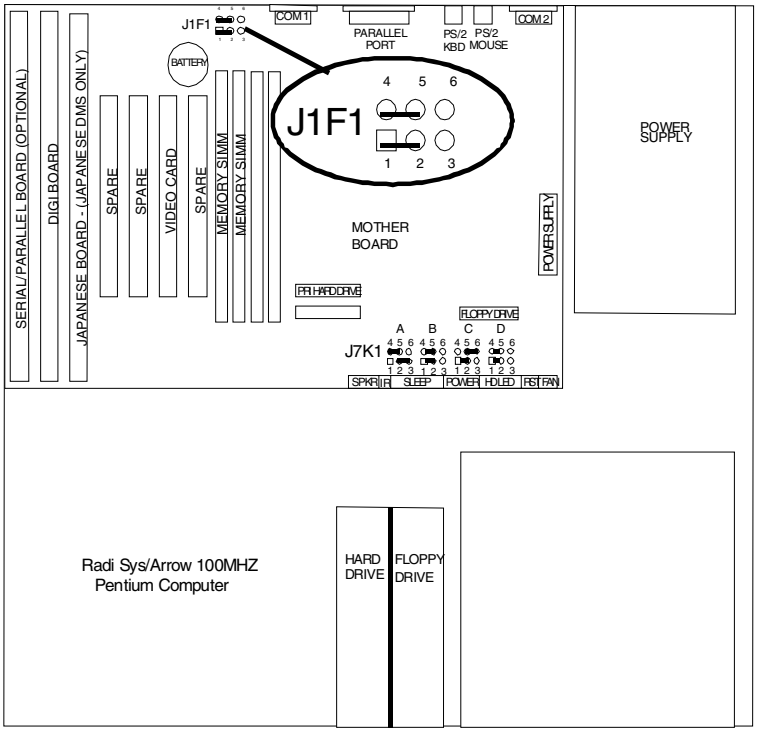



**Figure 2.7-3**



## STKS™ Analyzer, MAXM™ Analyzer RadiSys 100MHz Pentium Computer CMOS SETUP

To enter CMOS Setup, press F1 immediately after the boot and before the memory test.

**Table 2.7-1 RadiSys 100/166 MHz Pentium - Setup Key Functions**

| Setup Key | Description |
|---|---|
| F1 | Pressing the F1 key brings up a help screen for the current item |
| Esc | Pressing the Esc key takes you back to the previous screen. Pressing Esc in the Main, Advanced, Security or Exit screen allows you to Exit discarding changes. |
| Enter | Pressing the Enter key selects the current item or option. |
| ↑ | Pressing the ↑ key changes the selection to the previous item or option |
| ↓ | Pressing the ↓ key changes the selection to the next item or option. |
| ← → | Pressing the ← or → keys in the Main, Advanced, Security or Exit Menu screens changes the menu screen. Pressing either key in a sub-screen does nothing. |
| F5 | Pressing the F5 key allows you to Load Setup Defaults. |
| F6 | Pressing the F6 key allows you to Discard Changes. |
| F10 | Pressing the F10 key allows you to Exit Saving Changes. |

.

**Table 2.7-2 RadiSys 100/166 MHz Pentium - CMOS Setup**

| Main | Advanced | Security | Exit |
|---|---|---|---|
| *System Date* | | *mm dd yy* | |
| *System Time* | | *hh mm ss* | |
| *Floppy Options* | | *Press Enter* | |
| *Primary IDE Master* | | *QUANTUM Pioneer SG or current drive in system* | |
| *Primary IDE Slave* | | *Not Installed* | |
| *Secondary IDE Master* | | *Not Installed* | |
| *Secondary IDE Slave* | | *Not Installed* | |
| *Language* | | *English (U.S.)* | |
| *Boot Options* | | *Press Enter* | |
| *Video Mode* | | *EGA/VGA* | |
| *Mouse* | | *Not Installed* | |
| *Base Memory* | | *640KB* | |
| *Extended Memory* | | *15360KB* | |
| *BIOS Version* | | *1.00.07.DBO* | |

**Table 2.7-3 RadiSys 100/166 MHz Pentium - CMOS Setup - Primary IDE Master**

| | |
|---|---|
| *IDE Device Configuration* | *Auto Configured* |
| *Number of Cylinders* | *Auto Detected* |
| *Number of Heads* | *Auto Detected* |
| *Number of Sectors* | *Auto Detected* |
| *Maximum Capacity* | *Auto Detected* |
| *IDE Translation Mode* | *Auto Detected* |
| *Multiple Sector Setting* | *Auto Detected* |
| *Fast Programmed I/O Modes* | *Auto Detected* |

**Table 2.7-4 RadiSys 100/166 MHz Pentium - CMOS Setup - Boot Options**

| | |
|---|---|
| *First Boot Device* | *Floppy* |
| *Second Boot Device* | *Hard Disk* |
| *Third Boot Device* | *Disabled* |
| *Fourth Boot Device* | *Disabled* |
| *System Cache* | *Enabled* |
| *Boot Speed* | *Turbo* |
| *Num Lock* | *On* |
| *Setup Prompt* | *Enabled* |
| *Hard Disk Pre-Delay* | *Disabled* |
| *Typematic Rate Programming* | *Default* |
| *Scan User Flash Area* | *Disabled* |

**Table 2.7-5 RadiSys 100/166 MHz Pentium - CMOS Setup - Advanced**

| | |
|---|---|
| *Processor Type* | *Pentium® chip* |
| *Processor Speed* | *100MHz or 166MHz* |
| *Cache Size* | *256K* |
| *Peripheral Configuration* | *Press Enter* |
| *Advanced Chipset Configuration* | *Press Enter* |
| *Power Management Configuration* | *Press Enter* |
| *Plug and Play Configuration* | *Press Enter* |

**Table 2.7-6 RadiSys 100/166 MHz Pentium - CMOS Setup - Peripheral Configuration**

| | |
|---|---|
| *Primary IDE Interface* | *Auto* |
| *Secondary IDE Interface* | *Auto* |
| *Floppy Interface* | *Enabled* |
| *Serial Port 1 Address* | *COM1 3F8 IRQ4* |
| *Serial Port 2 Address* | *COM2 2F8 IRQ3* |
| *Serial Port 2 IR Mode* | *Disabled* |
| *Parallel Port Address* | *LPT1 378 IRQ7* |
| *Parallel Port Mode* | *Compatible* |
| *Primary IDE Interface* | *Enabled* |
| *Secondary IDE Interface* | *Enable* |
| *Floppy Interface* | *Enabled* |
| *Serial Port 1 Address* | *COM1 3F8 IRQ4* |
| *Serial Port 2 Address* | *COM2 2F8 IRQ3* |
| *Serial Port 2 IR Mode* | *Disabled* |
| *Parallel Port Address* | *LPT1 378 IRQ7* |

**Table 2.7-7 RadiSys 100/166 MHz Pentium - CMOS Setup - Advanced Chipset Configuration**

| | |
|---|---|
| *Base Memory Size* | *640KB* |
| *ISA LFB Size* | *Disabled* |
| *Video Palette Snoop* | *Disabled* |
| *Latency Timer (PCI Clock)* | *Auto Configured* |
| *Memory Error Detection* | *Parity* |
| *Bank 0 SIMM Detected* | *Fast Page Mode* |
| *Bank 1 SIMM Detected* | *None Installed* |

**Table 2.7-8 RadiSys 100/166 MHz Pentium - CMOS Setup - Power Management Configuration**

| | |
|---|---|
| *Power Management Configuration* | *Disabled* |

**Table 2.7-9 RadiSys 100/166 MHz Pentium - CMOS Setup - Plug and Play Configuration**

| | |
|---|---|
| *Configuration Mode* | *Use Setup Utility* |
| *ISA Shared Memory Size* | *Disabled* |
| *IRQ5 Available* | |
| *IRQ9 Available* | |
| *IRQ10 Available* | |
| *IRQ 12 Available* | |

**Table 2.7-10 RadiSys 100/166 MHz Pentium - CMOS Setup - Security**

| | |
|---|---|
| *User Password is* | *Disabled* |
| *Administrative Password is* | *Disabled* |
| *Set User Password* | *Press Enter* |
| *Set Administrative Password* | *Press Enter* |

**Table 2.7-11 RadiSys 100/166 MHz Pentium - CMOS Setup - EXIT**

| | |
|---|---|
| *Exit Saving Changes* | *Press Enter* |
| *Exit Discarding Changes* | *Press Enter* |
| *Load Setup Defaults* | *Press Enter* |
| *Discard Changes* | *Press Enter* |

## Jumper Settings for RadiSys 100/166MHz Pentium Computer Motherboard

**Table 2.7-12 Jumper Settings: RadiSys 100/166MHz Pentium Computer Motherboard Jumper Blk J7K1**

| | | | | |
|---|---|---|---|---|
| A | 2&3 | CLEAR PASSWORD | 4&5 | CLEAR CMOS |
| B | 1&2 | DISABLE ACCESS TO SETUP | 4&5 | PROCESSOR VOLTAGE SELECT |
| C | 1&2 | CPU SPEED | 5&6 | CPU SPEED |
| D | 1&2 | CPU SPEED | 4&5 | CPU SPEED |

**Table 2.7-13 Jumper Settings: RadiSys 100/166MHz Pentium Computer Motherboard Jumper Blk J1F1**

| | | | | |
|---|---|---|---|---|
| 1&2 | RECOVERY BOOT ENABLE | 4&5 | PROGRAM BOOT BLOCK ENABLE | 1&2 |

## Expansion Slots: for RadiSys 100/166MHz Pentium Computer Mother Board

**Table 2.7-14 Expansion Slots: RadiSys 100/166MHz Pentium Computer**

| Motherboard Silk-screen | Circuit Board Description |
|---|---|
| (ISA J4A1) | Serial/Parallel (Option) |
| (ISA J4B1) | Digiboard |
| (ISA J4B2) | Mitsubishi® AX Video Card |
| (PCI J4C1) | Not used, No cutout in computer base, not labeled on base of computer |
| (PCI J4D1) | Not Used |
| (PCI J4E1) | Video Card |
| (PCI J4E2) | Not Used |

## 2.8 HmX Analyzer RadiSys Pentium Tower Computer

**Figure 2.8-1 HmX Analyzer RadiSys Pentium Tower Computer - Front/Back**

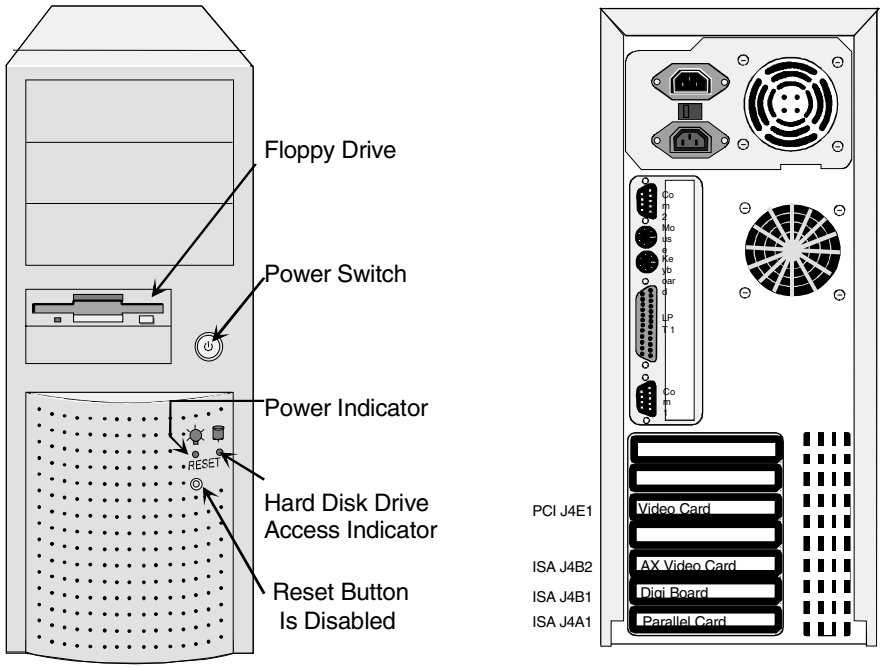
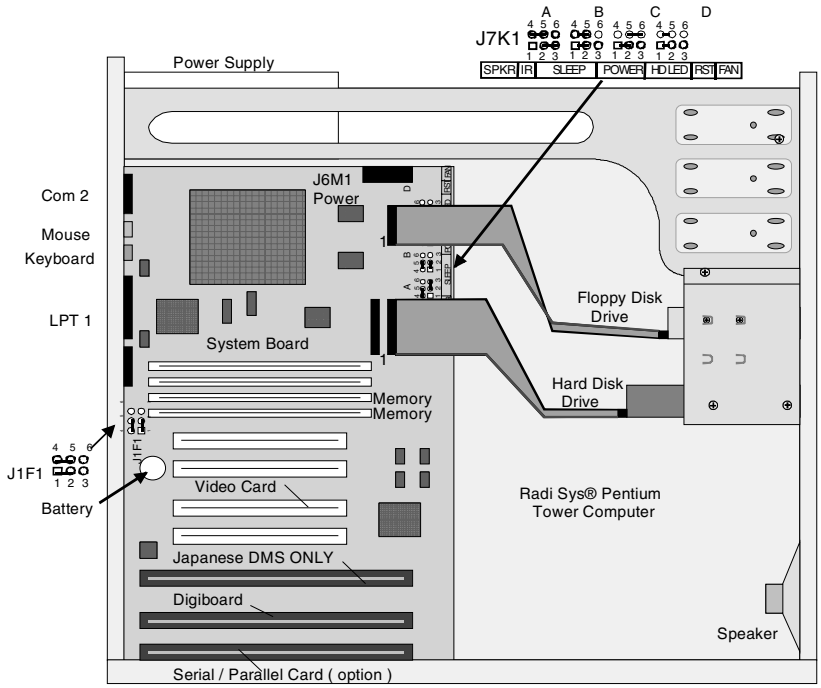



**Figure 2.8-2 HmX Analyzer RadiSys Pentium Tower Computer - Motherboard**



## HmX Analyzer RadiSys Pentium Tower Computer - CMOS Setup

To enter CMOS Setup, press F1 immediately after the boot and before the memory test

**Table 2.8-1 RadiSys Pentium Tower Computer - Setup Key Functions**

| Setup Key | Description |
|---|---|
| F1 | Pressing the F1 key brings up a help screen for the current item. |
| Esc | Pressing the Esc key takes you back to the previous screen. Pressing Esc in the Main, Advanced, Security or Exit screen allows you to Exit discarding changes. |
| Enter | Pressing the Enter key selects the current item or option. |
| ↑ | Pressing the ↑ key changes the selection to the previous item or option |
| ↓ | Pressing the ↓ key changes the selection to the next item or option. |
| ← → | Pressing the ← or → keys in the Main, Advanced, Security or Exit Menu screens changes the menu screen. Pressing either key in a sub-screen does nothing. |
| F5 | Pressing the F5 key allows you to Load Setup Defaults. |
| F6 | Pressing the F6 key allows you to Discard Changes. |
| F10 | Pressing the F10 key allows you to Exit Saving Changes. |

**Table 2.8-2 RadiSys Pentium Tower Computer - CMOS Setup**

| *Main* | *Advanced* | *Security* | *Exit* |
|---|---|---|---|
| *System Date* | | *mm dd yy* | |
| *System Time* | | *hh mm ss* | |
| *Floppy Options* | | *Press Enter* | |
| *Primary IDE Master* | | *QUANTUM Pioneer SG or current drive in system* | |
| *Primary IDE Slave* | | *Not Installed* | |
| *Secondary IDE Master* | | *Not Installed* | |
| *Secondary IDE Slave* | | *Not Installed* | |
| *Language* | | *English (U.S.)* | |
| *Boot Options* | | *Press Enter* | |
| *Video Mode* | | *EGA/VGA* | |
| *Mouse* | | *Not Installed* | |
| *Base Memory* | | *640KB* | |
| *Extended Memory* | | *15360KB* | |
| *BIOS Version* | | *1.00.07.DBO* | |

**Table 2.8-3 RadiSys Pentium Tower Computer - CMOS Setup - Primary IDE Master**

| | |
|---|---|
| *IDE Device Configuration* | *Auto Configured* |
| *Number of Cylinders* | *Auto Detected* |
| *Number of Heads* | *Auto Detected* |
| *Number of Sectors* | *Auto Detected* |
| *Maximum Capacity* | *Auto Detected* |
| *IDE Translation Mode* | *Auto Detected* |
| *Multiple Sector Setting* | *Auto Detected* |
| *Fast Programmed I/O Modes* | *Auto Detected* |

**Table 2.8-4 RadiSys Pentium Tower Computer - CMOS Setup - Boot Options**

| | |
|---|---|
| *First Boot Device* | *Floppy* |
| *Second Boot Device* | *Hard Disk* |
| *Third Boot Device* | *Disabled* |
| *Fourth Boot Device* | *Disabled* |
| *System Cache* | *Enabled* |
| *Boot Speed* | *Turbo* |
| *Num Lock* | *On* |
| *Setup Prompt* | *Enabled* |
| *Hard Disk Pre-Delay* | *Disabled* |
| *Typematic Rate Programming* | *Default* |
| *Scan User Flash Area* | *Disabled* |

**Table 2.8-5 RadiSys Pentium Tower Computer - CMOS Setup - Advanced**

| | |
|---|---|
| *Processor Type* | *Pentium® chip* |
| *Processor Speed* | *100MHz or 166MHz* |
| *Cache Size* | *256K* |
| *Peripheral Configuration* | *Press Enter* |
| *Advanced Chipset Configuration* | *Press Enter* |
| *Power Management Configuration* | *Press Enter* |
| *Plug and Play Configuration* | *Press Enter* |

**Table 2.8-6 RadiSys Pentium Tower Computer - CMOS Setup - Peripheral Configuration**

| | |
|---|---|
| *Primary IDE Interface* | *Auto* |
| *Secondary IDE Interface* | *Auto* |
| *Floppy Interface* | *Enabled* |
| *Serial Port 1 Address* | *COM1 3F8 IRQ4* |
| *Serial Port 2 Address* | *COM2 2F8 IRQ3* |
| *Serial Port 2 IR Mode* | *Disabled* |
| *Parallel Port Address* | *LPT1 378 IRQ7* |
| *Parallel Port Mode* | *Compatible* |
| *Primary IDE Interface* | *Enabled* |
| *Secondary IDE Interface* | *Enable* |
| *Floppy Interface* | *Enabled* |
| *Serial Port 1 Address* | *COM1 3F8 IRQ4* |
| *Serial Port 2 Address* | *COM2 2F8 IRQ3* |
| *Serial Port 2 IR Mode* | *Disabled* |
| *Parallel Port Address* | *LPT1 378 IRQ7* |

**Table 2.8-7 RadiSys Pentium Tower Computer - CMOS Setup - Advanced Chipset Configuration**

| | |
|---|---|
| *Base Memory Size* | *640KB* |
| *ISA LFB Size* | *Disabled* |
| *Video Palette Snoop* | *Disabled* |
| *Latency Timer (PCI Clock)* | *Auto Configured* |
| *Memory Error Detection* | *Parity* |
| *Bank 0 SIMM Detected* | *Fast Page Mode* |
| *Bank 1 SIMM Detected* | *None Installed* |

**Table 2.8-8 RadiSys Pentium Tower Computer - CMOS Setup - Power Management Configuration**

| | |
|---|---|
| *Power Management Configuration* | *Disabled* |

**Table 2.8-9 RadiSys Pentium Tower Computer - CMOS Setup - Plug and Play Configuration**

| | |
|---|---|
| *Configuration Mode* | *Use Setup Utility* |
| *ISA Shared Memory Size* | *Disabled* |
| *IRQ5 Available* | |
| *IRQ9 Available* | |
| *IRQ10 Available* | |
| *IRQ 12 Available* | |

**Table 2.8-10 RadiSys Pentium Tower Computer - CMOS Setup - Security**

| | |
|---|---|
| *User Password is* | *Disabled* |
| *Administrative Password is* | *Disabled* |
| *Set User Password* | *Press Enter* |
| *Set Administrative Password* | *Press Enter* |

**Table 2.8-11 RadiSys Pentium Tower Computer - CMOS Setup - EXIT**

| | |
|---|---|
| *Exit Saving Changes* | *Press Enter* |
| *Exit Discarding Changes* | *Press Enter* |
| *Load Setup Defaults* | *Press Enter* |
| *Discard Changes* | *Press Enter* |

## Jumper Settings for RadiSys Pentium Tower Computer Motherboard

**Table 2.8-12 Jumper Settings: RadiSys Pentium Tower Computer Motherboard Jumper Blk J7K1**

| | | | | |
|---|---|---|---|---|
| A | 2&3 | CLEAR PASSWORD | 4&5 | CLEAR CMOS |
| B | 1&2 | DISABLE ACCESS TO SETUP | 4&5 | PROCESSOR VOLTAGE SELECT |
| C | 1&2 | CPU SPEED | 5&6 | CPU SPEED |
| D | 1&2 | CPU SPEED | 4&5 | CPU SPEED |

**Table 2.8-13 Jumper Settings: RadiSys Pentium Tower Computer Motherboard Jumper Blk J1F1**

| | | | | |
|---|---|---|---|---|
| | 1&2 | RECOVERY BOOT ENABLE | 4&5 | PROGRAM BOOT BLOCK ENABLE |

## Expansion Slots: for RadiSys Pentium Tower Computer Motherboard

**Table 2.8-14 Expansion Slots: RadiSys Pentium Tower Computer**

| Motherboard Silk Screen | Circuit Board Description |
|---|---|
| (ISA J4A1) | Serial/Parallel (Option) |
| (ISA J4B1) | Digiboard |
| (ISA J4B2) | Mitsubishi® AX Video Card |
| (PCI J4C1) | Not used, No cutout in computer base, not labeled on base of computer |
| (PCI J4D1) | Not Used |
| (PCI J4E1) | Video Card |
| (PCI J4E2) | Not Used |

## 3.1 Creating Partitions

### Creating the Primary (C) Partition

#### Purpose:

Use the procedures in this section to create the DOS primary partition (C) for the 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, 3.2GB and 8.4GB hard drives.

This Procedure:

- Must be performed when upgrading MAXM™ Analyzer software 6A/B to 7A or higher.
- Must be performed when upgrading STKS™ Analyzer systems from 1G1/1J/1K/1L software to STKS™ Analyzer 2B or higher software.
- Must be performed after establishing that incorrect DOS partitions exist and the incorrect partitions have been deleted.
- Requires IBM® PC DOS 5.02.
- Is valid for all series of personal computers used on the MAXM™ Analyzer, STKS™ Analyzer and HmX Analyzer.
- Supplies information on all versions of 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, 3.2GB and 8.4GB hard drives.
- Supplies information for creating only a primary (C) partition on 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, 3.2GB and 8.4GB hard drives.

**NOTE:**

All DOS files that are required to perform the following partitioning procedures are located on disk 1 of the MAXM™ Analyzer DMS software installation disks - revision 7A and higher, STKS™ Analyzer DMS software installation disks - revision 2A and higher and HmX Analyzer DMS software installation disks - revision 1A and higher.

Each MAXM, STKS and HmX software revision has a mandated version of DOS and specified hard drive partition information. Refer to Table 3.3-1 to determine the appropriate version of DOS for the instrument and software revision in use prior to performing a partitioning procedure.

**Table 3.1-1 DOS revision, partition and DMS software revision requirements**

| DMS Software Revision | Required IBM® DOS Revision | Number of Partitions | Partitions Required |
|---|---|---|---|
| MAXM 6A/6B | 3.30 | 2 | C and D |
| MAXM 7 A/B/C | 5.02 | 2 | C and D |
| MAXM 8A and higher | 5.02 | 1 | C |
| STKS 1L and lower | 3.30 | 2 | C and D |
| STKS 2B and higher | 5.02 | 1 | C |
| HmX 1A and higher | 5.02 | 1 | C |

## Tools and Supplies Needed

- ❑ For MAXM™ Analyzer: Software disk #1 of DMS software revision 7 A/B/C or 8A or higher.
- ❑ For STKS™ Analyzer: Software disk #1 of DMS software revision 2B or higher.
- ❑ For HmX Analyzer: Software disk #1 of DMS software revision 1A or higher.

## Procedure

1. Creating the Primary (C) Partition on the Hard Drive:
   a. Insert disk #1 of the DMS software into drive A.
   b. Press Ctrl + Alt + Delete to re-boot the system from drive A. Wait for the system to completely re-boot.
   c. Press ↓ to highlight Perform Partition on Hard Disk.
   d. Press Enter, the screen displays:

*IBM DOS Version 5.02*
*Fixed Disk Setup Program*
*(C) Copyright IBM Corp. 1983-1992*

*FDISK Options*
*Current Fixed Disk Drive: 1*
*Current Fixed Disk Drive: 1*

*Choose one of the following:*

*1. Create DOS partition or Logical DOS Drive*
*2. Set active partition*
*3. Delete partition or Logical DOS Drive*
*4. Display partition information*

*Enter Choice: [1]*
*Press <Esc> to exit FDISK*

   e. Press 1 then Enter, The Screen displays:

*IBM DOS Version 5.02*
*Fixed Disk Setup Programm*
*(C) Copyright IBM Corp. 1983-1992*

*FDISK Options*

*Current Fixed Disk Drive: 1*
*Choose one of the following:*

*1. Create Primary DOS partition*
*2. Create Extended DOS partition*
*3. Create Logical DOS Drive(s) in the Extended DOS Partition*

*Enter Choice: [1]*

*Press <Esc> to exit FDISK*

f. Press [1] then [Enter], the screen displays:

*Create Primary DOS Partition*
*Current fixed disk drive: 1*

*Do you wish to use the maximum available size*
*for a Primary DOS Partition and make the*
*partition active (Y/N).....? [Y]*

*Press Esc to return to FDISK Options*

g. Press [Y] then [Enter], the screen displays:

*System will now restart*

*Insert DOS system diskette in drive A:*
*Press any key when ready.....*

h. Press [Enter], the computer re-boots and automatically starts the formatting process. The screen displays:

**********

*Drive C must be formatted before using the DMS software.*

**********

*WARNING, ALL DATA ON NON REMOVABLE DISK*
*DRIVE C: WILL BE LOST!*
*Proceed with format (Y/N)?*

i. Press [Y] then [Enter].

j. Wait for the computer to finish formatting. When formatting is completed, this information appears on the screen:

*Formatting xxx M*
*Format complete*
*System Transferred*

*Volume label (11 characters, ENTER for none)?*

k. Press Enter, the information on the screen scrolls up and the following information appears.

NOTE: Refer to table 3.1.2 for specific drive information.

*xxxxxxxx bytes total disk space*
*xxxxx bytes used by system*
*xxxxxxxx bytes available on disk*

*xxxx bytes in each allocation unit*
*xxxxx allocation units available on disk.*

*Volume Serial Number is XXXXXXXXX*

**Table 3.1-2 Hard drive size and partition information for MAXM™/STKS™ at 2A or higher and HmX Systems**

| Information Description | 40MB | 52MB | 245MB | 340MB | 850MB | 1.080GB | 3.2GB | 8.4GB |
|---|---|---|---|---|---|---|---|---|
| Bytes total disk space | 41844736 | 52094976 | 244801536 | 341090304 | | 1457664 | 2144631680 | 2144631680 |
| Bytes used by system | 122880 | 122880 | 126976 | 131072 | | | | |
| Bytes available on disk | 41721856 | 51972096 | 244374560 | 340959232 | | | | |
| Bytes in each allocation unit | 2048 | 2048 | 4096 | 8192 | | 512 | 32768 | 32768 |
| Allocation units available on disk | 20372 | 20377 | 59735 | 41621 | | 2847 | 65510 | 65510 |

l. Within 15 seconds, the DMS re-boots and the Installation menu returns to the screen. The hard disk is now completely prepared and ready for the installation of the DMS software. See Software Installation, for installation instructions; See Verifying a Formatted Primary Partitioned Hard Drive for verification instructions.

## 3.2 Deleting the Primary (C) Partition on All DMS Computers

### Purpose:

Use the procedures in this section to delete the DOS primary partition (C) for the 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, 3.2GB and 8.4GB hard drives.

For Operating systems using IBM® PC DOS 5.02 (used for program software revisions MAXM™7A and higher, STKS™ 2A and higher and HmX 1A and higher). Refer to Section 3.3 Deleting the primary (C) and extended (D) partitions for operating systems using IBM® PC DOS 3.30 (used with program software revisions MAXM 6B or lower and STKS 1L, 1L/J or lower.

**NOTE: Hard drive partitions should be deleted using the same revision of IBM® PC DOS which they were created with. To determine the DOS revision; boot the computer off of the hard drive and exit to DOS. Type C: and press Enter, then type CD\DOS and press Enter and type ver and press Enter.**

Do not boot the computer using a floppy disk. This will show you the DOS revision of the floppy drive, not the hard drive.

This Procedure:

- Must be performed after establishing that incorrect DOS partitions exist.
- Requires IBM® PC DOS 5.02
- Is valid for all series of personal computers used on the MAXM™, STKS™ and HmX Analyzer Systems
- Supplies information on all versions of 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, 3.2GB and 8.4GB hard drives.
- Must be used to delete partitions on hard drives with one existing partition (C).
- Must be used if a partition exists and a new partition needs to be created.

### Tools/Supplies Needed:

- ❑ For MAXM™ Analyzer: Software disk #1 of program, level 7 A/B/C or 8A and higher.
- ❑ For STKS™ Analyzer: Software disk #1 of program, level 2A and higher.
- ❑ For HmX Analyzer: Software disk #1 of program, level 1A and higher.

### Procedure

1. Deleting the Primary (C) Partition:
   a. Insert disk #1 of the program software into drive A.
   b. Press Ctrl + Alt + Delete to re-boot the system from drive A. Wait for the system to completely re-boot.
   c. Press ↓ to highlight Perform Partition on Hard Disk.
   d. Press Enter, the screen displays:

*IBM DOS Version 5.02*
*Fixed Disk Setup Program*
*(C) Copyright IBM Corp. 1983-1992*

***FDISK Options***
*Current Fixed Disk Drive: 1*
*Choose one of the following:*

*1. Create DOS Partition or Logical DOS Drive*
*2. Set active partition*
*3. Delete partition or Logical DOS Drive*
*4. Display Partition Information*

*Enter Choice: [1]*
*Press* ***<Esc>*** *to exit FDISK*

e. Press 3 and press Enter, the screen displays:

*Delete DOS Partition or Logical DOS Drive*
*Current fixed disk drive: [1]*
*Choose one of the following:*

*1. Delete Primary DOS Partition*
*2. Delete Extended DOS Partition*
*3. Delete Logical DOS Drive(s) in the Extended DOS Partition*
*4. Delete Non-DOS Partition*

*Enter Choice [1]*
*Press* ***<Esc>*** *to return to FDISK Options*

f. Press 1 and press Enter, the screen displays:

**Note:** Refer to Table 3.2-1 for disk information

**Table 3.2-1 Primary Partition and Hard Drive Information DMS Display**

| ***Partition*** | ***Status*** | ***Type*** | ***Volume Label*** | ***Mbytes*** | ***System*** | ***Usage*** |
|---|---|---|---|---|---|---|
| *C:1* | *A* | *PRI* | *DOS* | *xxx* | *FAT16* | *100%* |
| *Total disk space is xxx Mbytes (1MB=xxxxxxx bytes)* | | | | | | |

*Warning! Data in the deleted Primary DOS Partition will be lost.*
*What Primary partition do you want to delete....?*

*Press <Esc> to return to FDISK Options*

g. Press 1 Enter, the message "*Enter Volume Label.....*? [ ] appears.
h. Press Enter, the message "*Are you sure (Y/N).....*? [ ] appears.
i. Press Y Enter, the message "*Primary DOS Partition deleted* appears".
j. Press Esc, FDISK returns to the Main Menu.

**Table 3.2-2 Primary Partition and Hard Drive Information (DOS 5.02) All Hmx, MAXM and STKS 2A & Higher Systems**

| Hard Drive | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| 40MB | C:1 | A | PRI | DOS | 40 | FAT 16 | 80% |
| 52MB | C:1 | A | PRI | DOS | 50 | FAT 16 | 100% |
| 245MB | C:1 | A | PRI | DOS | 234 | FAT 16 | 100% |
| 340MB | C:1 | A | PRI | DOS | 325 | FAT 16 | 100% |
| 850MB | C:1 | A | PRI | DOS | 504 | FAT 16 | 100% |
| 1.080GB | C:1 | A | PRI | DOS | 1457 | FAT 16 | 100% |
| 3.2GB | C:1 | A | PRI | DOS | 3075 (limited to 2047.46 | FAT 16 | 67% |
| 8.4GB | C:1 | A | PRI | DOS | 8033 (limited to 2047.46) | FAT 16 | 26% |

## 3.3 Creating Primary (C) and Extended (D) Partitions

Creating Primary (C) and Extended (D) Partitions

For Operating Systems using IBM® PC DOS 3.3 (used for DMS program software revisions MAXM 6B or lower and ***STKS 1L*** or lower.

For Operating Systems using IBM® PC DOS 5.02 (used for DMS program software revisions MAXM 7A and higher and STKS 2A and higher), refer to section Creating the Primary (C) Partition under Heading 3.1, Creating Partitions.

Refer to Table 4.1-1 through Table 4.1-8 for Hard Disk size and partition size information.

This Procedure:

- Must be performed after establishing that incorrect DOS partitions exist
- Requires IBM® PC DOS 3.30
- Is valid for all series of personal computers used on the MAXM and STKS
- Supplies information on all versions of 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, ***3.2GB*** and ***8.4GB*** hard drives

### Tools/Supplies Needed

- ❑ For MAXM and STKS with 3.5 inch floppy drive:

  IBM® PC DOS Start-up/Operating disk or Program Disk, IBM® PC DOS 3.30
- ❑ For STKS with 5.2 inch floppy driveL:

  IBM PC DOS 3.30, 5.25 inch Start-up Disk

### Procedure

1. Creating Primary (C) and Extended (D) Partitions:
   a. Turn the power off to the DMS and insert the appropriate IBM® PC DOS 3.30 Disk into Drive A and turn the power back on.
   b. When the Date and Time fields appear, press Enter Enter.
   c. At the A:> prompt type **FDISK** and press Enter, the screen displays:

*IBM Personal Computer*
*Fixed Disk Setup Program Version 3.30*
*(c) Copyright IBM Corp. 1983, 1987*

*FDISK Options*
*Current Fixed Disk Drive: 1*
*Choose one of the following:*

*1. Create DOS Partition*
*2. Change Active Partition*
*3. Delete DOS Partition*

*4. Display Partition Information*
*Press Esc to return to DOS*

d. Type [1] and press [Enter], the screen displays:

*Create DOS Partition*
*Current Fixed Disk Drive: 1*

*1. Create Primary DOS Partition*
*2. Create Extended DOS Partition*
*Press Esc to return to DOS*

e. Type [1] and press [Enter], the screen displays:

*Fixed Disk Drive: 1*
*Do you wish to use the maximum size*
*for a DOS partition and make the DOS*
*partition active (Y/N).....?*
*Press Esc to return to DOS*

f. Type [Y] and press [Enter], the screen displays:

*Insert DOS diskette in drive A:*
*Press any key when ready*

g. **Press any key** to start loading the DOS Start-up software. When Date and Time fields appear, press [Enter] [Enter].

h. At the A:> prompt type **FDISK** and press [Enter], the screen displays:

*IBM Personal Computer*
*Fixed Disk Setup Program Version 3.30*
*(c) Copyright IBM Corp. 1983, 1987*

*FDISK Options*
*Choose one of the following:*

*1. Create DOS Partition*
*2.Change Active Partition*
*3. Delete DOS Partition*
*4. Display Partition Information*
*Press Esc to return to DOS*

i. Type [1] and press [Enter], the screen displays:

*Create Extended DOS Partition*
*Current Fixed Drive: 1*

*1. Create Primary DOS Partition*
*2. Create Extended DOS Partition*
*Press Esc to return to DOS*

j. Type [2] and press [Enter], the screen displays:

*Create Extended DOS Partition*
*Current Fixed Drive: 1*

| *Partition* | *Status* | *Type* | *Start* | *End* | *Size* |
|---|---|---|---|---|---|
| *C: 1* | *A* | *PRI DOS* | *0* | *XXX* | *XXX* |

*Total Disk space is xxxx cylinders*
*maximum space available for partition*
*is xxx cylinders.*

*Enter Partition size.....*
*Press Esc to return to FDISK Options*

k. Enter the partition size, which must be three cylinders less than the maximum space available, and press [Enter], the screen displays:

*Create Extended DOS Partition*
*Current Fixed Disk Drive: 1*

| Partition | Status | Type | Start | End | Size |
|---|---|---|---|---|---|
| C:1 | A | PRI DOS | 0 | XXX | XXX |
| 2 | | EXT DOS | XXX | XXX | XXX |

*Extended DOS Partition created*
*Press Esc to return to FDISK Options*

l. Press [Esc] the screen displays:
*Create Logical DOS Drive (s)*
*No logical drive defined*
*Total partition size is xxx cylinders*
*Enter logical drive size.....*

m. Enter the size of the Extended DOS Partition for the logical drive size and press [Enter], then press [Esc], the screen displays:

*Create Logical DOS Drives (s)*

| *Drv* | *Start* | *End* | *Size* |
|---|---|---|---|
| *D:* | *XXX* | *XXX* | *XXX* |

*All available space in the Extended DOS partition is assigned to logical drives.*

*Logical DOS drive created, drive letters changed or added*

*Press Esc to return to FDISK Options*

n. Press Esc, the screen displays:

*FDISK Options*
*Current Fixed Disk Drive: 1*
*Choose one of the following:*

*1. Create DOS Partition*
*2. Change Active Partition*
*3. Delete DOS Partition*
*4. Display Partition Information*

*Press Esc to return to DOS*

o. Press Esc, the system restarts and then the screen displays:

*Insert DOS diskette into drive A:*
*Press any key when ready.....*

p. Press any key to initiate loading of the DOS disk.

q. When the Date and Time fields come up and the A:> prompt appears, the partitioning of the hard disk drive into logical partitions is complete. The hard disk drive is now ready for high level formatting.

## 3.4 Deleting Primary (C) and Extended (D) Partitions

For Operating Systems using IBM® PC DOS 3.30 (used for DMS program software revisions MAXM 6B or lower and STKS 1L or lower).

For Operating Systems using IBM® PC DOS 5.02 (used for DMS program software revisions MAXM 7A and higher STKS 2A and higher and HmX 1A and higher, refer to Heading 3.2, Deleting the Primary (C) Partition on All DMS Computers.

> **NOTE:** Hard drive partitions should be deleted using the same revision of IBM® PC DOS with which they were created. To determine the DOS revision; at the C:> prompt, change directory to DOS (C: CD/DOS) and type VER.

This Procedure:

- Must be performed when upgrading MAXM software 6A & 6B to 8A or higher
- Must be performed when upgrading STKS systems from 1L or lower software to STKS 2B or higher software.
- Must be performed after establishing the incorrect DOS partitions exist
- Requires IBM® PC DOS 3.3 (see table 3.1-1)
- Is valid for all series of personal computers used on the MAXM, STKS and HmX
- Supplies information on all versions of 40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, ***3.2GB*** and ***8.4GB*** hard drives

### Tools/Supplies Needed

- ❑ For MAXM, STKS and HmX with 3.5 inch floppy drive:

  IBM® PC DOS 3.30 3.5 inch Start-up/Operating disk or Program Disk, IBM® PC DOS 3.30

- ❑ For STKS with 5.2 inch floppy drive:

  IBM® PC DOS 3.30 5.25 Start-up disk

### Procedure

1. Deleting Primary (C) And Extended (D) Partitions:
   a. Insert the appropriate DOS disk into drive A:.
   b. Press Ctrl + Alt + Delete to re-boot the system from drive A:. Wait for the system to completely re-boot.
   c. Press Enter Enter for the date and time fields.
   d. At the A:> prompt, type **FDISK** and press Enter, the screen will display:

*FDISK Options*

*Current Fixed Disk Drive: 1*

*Choose one of the following*

*1. Create DOS partition or Logical DOS drive*
*2. Set active partition*
*3. Delete partition or Logical DOS drive*
*4. Display partition information*

*Enter Choice: [1]*
*Press Esc to exit FDISK*

e. Press 3 Enter, the screen displays:

*Delete DOS Partition or Logical DOS Drive*

*Current fixed disk drive: 1*
*Choose one of the following:*

*1. Delete Primary DOS Partition*
*2. Delete Extended DOS Partition*
*3. Delete Logical DOS Drive(s) in the Extended DOS Partition*
*4. Delete Non-DOS Partition*

*Enter choice: [ ]*
*Press Esc to return to FDISK Options*

f. Press 3 Enter, the screen displays:

*Delete Logical DOS Drive(s) in the Extended DOS Partition*

| *Drv* | *Volume Label* | *Mbytes* | *System* | *Usage* |
|---|---|---|---|---|
| *D:* | | *XXXX* | *Fat16* | *100%* |

*Total Extended DOS partition size is XX Mbytes (1 Mbyte=1048576 bytes)*
*Warning! Data in the deleted Logical DOS Drive will be lost*
*What drive do you want to delete.....? [ ]*

*Press Esc to return to FDISK Options*

g. Press D Enter, the screen displays:

*Enter Volume Label.....? [ ]*

h. Press Enter, the screen displays:

*Are you sure (Y/N).....? [ ]*

i. Press Y Enter, the screen displays:

*Drv Volume Label Mbytes System Usage*
*D: Drive deleted*

*Delete Logical DOS Drive(s) in the Extended DOS Partition*
*All logical drives deleted in the Extended DOS Partition*

*Press Esc to continue*

j. Press Esc Esc; FDISK returns to the Main Menu, the screen displays:

*FDISK Options*
*Current Fixed Disk Drive [1]*
*Choose one of the following:*
*1. Create DOS partition or Logical DOS Drive*
*2. Set active partition*
*3. Delete partition or Logical DOS Drive*
*4. Display partition information*

*Enter Choice: [1]*
*Press Esc to exit FDISK*

k. Press 3 Enter, the screen displays:

*Delete DOS Partition or Logical DOS Drive*

*Current fixed disk drive: 1*
*Choose one of the following:*
*1. Delete Primary DOS Partition*
*2. Delete Extended DOS Partition*
*3. Delete Logical DOS Drive(s) in the Extended DOS Partition*
*4. Delete Non-DOS Partition*

*Enter Choice: [ ]*
*Press Esc to return to FDISK Options*

l. Press 2 Enter, the screen displays:

| *Partition* | *Status* | *Type* | *Volume Label* | *Mbytes* | *System* | *Usage* |
|---|---|---|---|---|---|---|
| *C: 1* | *A* | *PRI DOS* | | *XXX* | *FAT16* | *XX%* |
| *2* | | *EXT DOS* | | *XXX* | | *XX%* |

*Warning! Data in the Extended DOS*
*Partition will be lost. Do you wish*
*to continue.....? [N]*

m. Press Y Enter, the screen displays:

*Extended DOS Partition deleted*

n. Press Esc, FDISK returns to the Main Menu, the screen displays:

*FDISK Options*

*Current Fixed Disk Drive: 1*
*Choose one of the following:*

*1. Create DOS partition or Logical DOS drive*
*2. Set active partition*
*3. Delete partition or Logical DOS drive*
*4. Display partition information*

*Enter choice: [ ]*
*Press Esc to exit FDISK*

o. Press 3 Enter, the screen displays:

*Delete DOS Partition or Logical DOS Drive*
*Current fixed disk drive: 1*
*Choose one of the following:*

*1. Delete Primary DOS Partition*
*2. Delete Extended DOS Partition*
*3. Delete Logical DOS Drive(s) in the Extended DOS Partition*
*4. Delete Non-DOS Partition*

*Enter Choice: [ ]*
*Press Esc to exit FDISK Options*

p. Press 1 Enter, the screen displays:

| *Partition* | *Status* | *Type* | *Volume Label* | *Mbytes* | *System* | *Usage* |
|---|---|---|---|---|---|---|
| *C: 1* | *A* | *PRI DOS* | | *XXX* | *FAT16* | |

*Total disk space is XXX Mbytes (1Mbyte=1048576 bytes)*

*Warning! Data in the deleted Primary DOS Partition will be lost*
*What primary partition do you want to delete.....? [1 ]*
*Press Esc to return to FDISK Options*

q. Press 1 Enter, the screen displays:

*Enter Volume Label.....? [ ]*

r. Press Enter, the screen displays:

*Are You Sure (Y/N).....? [ ]*

s. Press Y Enter, the screen displays:

*Primary DOS Partition deleted*

t. Press Esc, FDISK returns to the Main Menu.

## 4.1 Verifying Primary (C) and Extended (D) Partitioned Hard Drives

### Purpose

Use these procedures to view and verify the Primary (C) hard drive that was previously created with one partition.

This Procedure:

- Must be used after creating a primary (C) DOS partition
- Must be used when partition information on the hard dive is unknown
- Must be used to verify hard drives with one existing partition (C)
- Supplies information on all versions of hard drives (40MB, 52MB, 245MB, 340MB, 850MB, 1.080GB, 3.2GB and 8.4GB hard drives.
- Is valid for all series of personal computers used on the MAXM™ Analyzer, STKS™ Analyzer and HmX Analyzer Systems.
- Requires IBM® PC DOS 5.02

If this procedure fails:

- Obtain the correct partition information per instrument software requirements.
- Perform the respective delete partition procedure.
- Perform the respective create partition procedure.

### Tools/Supplies Needed

- ❑ For MAXM™ Analyzer: Software Disk #1 of program, level 7A/B/C or 8A or higher.
- ❑ For STKS™ Analyzer: Software Disk #1 of program, level 2B or higher.
- ❑ For HmX Analyzer: Software Disk #1 of all program level revisions.

### Procedure

1. Verifying Primary (C) and Extended (D) Partitioned Hard Drives
   a. Insert disk 1 of the DMS software into drive A.
   b. Press Ctrl+Alt+Delete to reboot the system from drive A. Wait for the system to completely re-boot.
   c. Press ↓ to highlight Perform Partition on Hard Disk.
   d. Press Enter to select this option, the screen displays:

*IBM DOS Version 5.02*
*Fixed Disk Setup Program*
*(C) Copyright IBM Corp. 1983-1992*

***FDISK Options***
*Current Fixed Disk Drive 1:*
*Choose one of the following:*

*1. Create DOS partition or Logical DOS Drive*
*2. Set active partition*
*3. Delete partition or Logical DOS Drive*
*4. Display partition information*

Enter choice: [1]

Press Esc to exit FDISK

e. Select 4 and press Enter, the screen displays:

*Display Partition Information*

*Current fixed drive: 1*

| *Partition* | *Status* | *Type* | *Volume Label* | *Mbytes* | *System* | *Usage* |
|---|---|---|---|---|---|---|
| *C:1* | *A* | *PRI DOS* | | *XXX* | *FAT16* | *XX%* |

**Note:** For drive and partition information for STKS™ Analyzer software revision 3C or higher, MAXM™ Analyzer software revision 8D or higher and all HmX Analyzer software revisions, see Table 3.2-2, Primary Partition and Hard Drive Information (DOS 5.02) All Hmx, MAXM and STKS 2A & Higher Systems. For drive and partition information for STKS analyzer software revision 1L 1L/1J, see Heading Partitioning Information for STKS Software Revision 1L 1L/1J, Table 4.1-1 through Table 4.1-8.

*Total disk space is xxx Mbytes (1Mybte=1048576 bytes)*
*The Extended DOS Partition contains logical DOS Drives*
*Do you want to display the logical drive information (Y/N).....? [Y]*

*Press Esc to return to FDISK Options*

f. Verify that the information displayed is correct for the hard drive and the software revision of the DMS under service.

g. Press Y Enter, the screen displays:

| *Drv* | *Volume Label* | *Mbytes* | *System* | *Usage* |
|---|---|---|---|---|
| *D:* | | *XXX* | *FAT16* | *XX%* |

**Note:** For drive and partition information for STKS™ Analyzer software revision 3C or higher, MAXM™ Analyzer software revision 8D or higher and all HmX Analyzer software revisions, see Table 3.2-2, Primary Partition and Hard Drive Information (DOS 5.02) All Hmx, MAXM and STKS 2A & Higher Systems. For drive and partition information for STKS analyzer software revision 1L 1L/1J, see Heading Partitioning Information for STKS Software Revision 1L 1L/1J, Table 4.1-1 through Table 4.1-8.

*Total Extended DOS Partition size is XX Mbytes (1 Mbyte=1048576 bytes)*

*Press Esc to continue*

h. Verify that the information displayed is correct for the hard drive and the software revision of the DMS under service.

- If the information is not correct refer to Deleting Primary (C) and Extended (D) Partitions.
- If the information is correct, proceed to the next step.

i. Press Esc Esc to return to the Installation menu.

## Partitioning Information for STKS Software Revision 1L 1L/1J

**Table 4.1-1 Partitioning Information for STKS Software Revision 1L 1L/1J, 40MB Hard Drive**

| 40 MB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | 32 | FATXX | 80% |
| | 2 | | EXT DOS | | 8 | | 20% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 18 | FATXX | 100% | | |

**Table 4.1-2 Partitioning Information for STKS Software Revision 1L 1L/1J, 52MB Hard Drive**

| 52 MB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | 32 | FATXX | 64% |
| | 2 | | EXT DOS | | 8 | | 36% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 18 | FATXX | 100% | | |

**Table 4.1-3 Partitioning Information for STKS Software Revision 1L 1L/1J, 245MB Hard Drive**

| 245 MB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | 117 | FATXX | 50% |
| | 2 | | EXT DOS | | 117 | | 50% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 117 | FATXX | 100% | | |

**Table 4.1-4 Partitioning Information for STKS Software Revision 1L 1L/1J, 340MB Hard Drive**

| 340 MB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | 163 | FATXX | 50% |
| | 2 | | EXT DOS | | 163 | | 50% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 117 | FATXX | 100% | | |

**Table 4.1-5 Partitioning Information for STKS Software Revision 1L 1L/1J, 850MB Hard Drive**

| 850 MB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | | FATXX | 50% |
| | 2 | | EXT DOS | | | | 50% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 117 | FATXX | 100% | | |

**Table 4.1-6 Partitioning Information for STKS Software Revision 1L 1L/1J,1.080MB Hard Drive**

| 1.080 GB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | | FATXX | 50% |
| | 2 | | EXT DOS | | | | 50% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 117 | FATXX | 100% | | |

**Table 4.1-7 Partitioning Information for STKS Software Revision 1L 1L/1J,3.2GB Hard Drive**

| 3.2 GB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | | FATXX | 50% |
| | 2 | | EXT DOS | | | | 50% |
| | | | | | | | |
| Logical Drive | Drv | Volume Label | Mbytes | System | Usage | | |
| | D: | | 117 | FATXX | 100% | | |

**Table 4.1-8 Partitioning Information for STKS Software Revision 1L 1L/1J, 8.4GB Hard Drive**

| 8.4 GB | Partition | Status | Type | Volume Label | Mbytes | System | Usage |
|---|---|---|---|---|---|---|---|
| | C:1 | A | PRI DOS | | | FATXX | 50% |
| | 2 | | EXT DOS | | | | 50% |
| | | | | | | | |
| **Logical Drive** | **Drv** | **Volume Label** | **Mbytes** | **System** | **Usage** | | |
| | D: | | 117 | FATXX | 100% | | |

## 5.1 Hard Drive Low Level Formatting Procedures

There are two types of Hard Drive Formatting:

- Low Level Formatting Procedure For the Seagate MFM ST251-1 Hard Drive

  Low Level Formatting is only required for MFM Hard Drives and should only be performed on the Seagate ST251-1 40MB MFM hard drive. Low level formatting should not be performed on IDE Hard Drives.

- High Level Formatting A Partitioned (IDE) Hard Drive (C:>) All Sizes Using IBM® PC DOS 5.02

  High Level formatting is required on both MFM and IDE Hard Drives.

### Low Level Formatting Procedure For the Seagate MFM ST251-1 Hard Drive

The HmX Analyzer, MAXM™ Analyzer and STKS™ Analyzer computers currently use IDE type hard drives. The IDE the drive is different from the MFM hard drives because of the method used to control the heads.

MFM hard drive types, such as the Seagate ST251-1, use stepper motors to position the heads by driving them to a calculated position determined by the controller and assume they are on the correct position.

The IDE type hard drive uses voice coils to position the heads. Servo signals, embedded onto the disk provide feedback to the controller on the exact position of the heads relative to a given track. Thus the controller can adjust the head for small variations in track location such as those caused by temperature variation and mechanical instabilities.

The purpose of re-defining the low level format, for drive types other than IDE, is to compensate for mechanical instabilities and temperature variations. Generally, all IDE type hard drives do not require low level format after the initial format is performed by the manufacturer.

**CAUTION** The IDE type hard drives are low level formatted by the manufacturer using a special proprietary controller. The manufacturer of the hard drive has recommended that low level format of the IDE drive not be performed because there is a danger that if low level format is attempted it may destroy the factory low level format which will render the disk un-usable.

The MFM Seagate ST251-1 40MB hard drive which was initially used on the INTEL 301Z 386 computer requires Low Level Formatting. There are two procedures which may be used to perform this function.

- Low Level Formatting Procedure, (Disk Manager Method)
- Low Level Formatting Procedure, (CHECKIT Method)

#### Low Level Formatting Procedure, (Disk Manager Method)

1. Power off the computer and insert the DOS 3.30 Startup Disk into drive A and turn the power back on. Go to the A:> prompt by pressing Enter Enter when the Enter Time and Date screen is displayed.

2. Remove the DOS Startup disk and insert the Disk Manager (Version 3.4, 3.5 or 3.6) in drive A and type: **DM/C/M**
3. Press Enter and the Disk Manager Main Menu will display on the Monitor select:

   *[I]nitialization.*

   On the Initialization Menu select:

   *[I]nitialize*

   A question will appear on the next line as follows:

   *Is the above DEFECT-LIST accurate for this disk? (Y/N):*

4. Verify the defect list is accurate per the label on the Hard Drive. If the list is correct, skip the next step and proceed with initialization. If the list is incorrect select:

   *[D]efect list management then:*
   *[A]dd and modify the defect list*

5. When complete return to the [I]nitialization Menu and select:

   *[I]nitialize*

   At this point the defect list should be correct.
6. Select Y after verifying defect, then press Enter, the monitor displays:

   *Do a*
   *[T]rack*
   *[P]artition*
   *entire [D]isk*
   *[R]eturn to initialization menu*

   *Select an option*
7. Select entire [**D**]isk and a question will appear as follows:

   *Enter Interleave Value [3]*

8. Enter [1] and press [Enter], the monitor will display:

   *THIS WILL DESTROY ANY EXISTING DATA ON THIS DISK!*
   *CONTINUE? (y/n):*

9. Select [Y] and press [Enter]. Upon completion of initialization the monitor will display:

   *Initialization complete, return to PARTITION Menu to prepare for DOS usage*

   Select [**R**]eturn to initialization menu, then:
   Select [**D**]efect-list Management. From the Defect-list Management Menu
   Select [**S**]can Disk for Defects. A question will appear on the next line as follows:

   *Preserve any existing list entries also?: (Y/N)*

10. Select [Y] and press [Enter]. The Disk Manager will scan the Hard Drive to locate the defective cylinders and lists the defective positions.

11. Select [**W**]rite the Defect Map File from the Defect List Management Menu. A question will appear on the next line as follows:

    *Confirm Write Defect-list File? (Y/N)*

12. Select [Y] and press [Enter]. The Defect Map File is stored on Hard Drive C:.

13. Select [**R**]eturn to Initialization Menu from the Defects-list Management Menu. Ensure the list of bad cylinders printed on top of the Hard Drive are all included in the Defect-list, if not then enter them manually.

14. Select [**R**]eturn to DOS from the Main Menu, the monitor will display:

    *Exit DISK MANAGER? (Y/N):*

15. Select [Y] and press [Enter], the monitor will display:

    *Prepare system for startup, and strike return (Enter) when ready...*

The Hard Drive has now been initialized.

16. Proceed to the PARTITION INFORMATION section to create a DOS Partition on the Hard Drive.

## Low Level Formatting Procedure, (CHECKIT Method)

1. Power off the computer and insert the DOS 3.30 Startup Disk into drive A and turn the power back on. Go to the A:> prompt by pressing Enter Enter when the Enter Time and Date screen is displayed.

2. Remove the DOS Startup disk and insert the Checkit program Disk 1 of 3 into Drive A. At the A:> prompt type **CHECKIT** and press Enter

3. When the Main Menu appears select:

   **TOOLS**, then remove Disk 1 and insert Disk 2 of 3 into Drive A, select:

   **FORMAT AT Hard Drive**. For the Seagate ST251-1, set the Form Values (by selecting **C**) as follows:

   *Drive number: **[0]***
   *Drive type: **[44]***
   *Cylinders: **[819]***
   *Heads: **[6]***
   *Interleave **[1]***
   *Enter bad tracks **[Y]** (Enter bad tracks per the Defect label on the Hard Drive)*

   *NOTE: HEED ALL WARNINGS, PROCEEDING BEYOND THIS POINT WILL DESTROY ALL DATA ON THE HARD DISK!*

4. Initiate the low level format.

5. Upon completion, exit CHECKIT to DOS.

## 5.2 High Level Formatting A Partitioned (IDE) Hard Drive (C:>) All Sizes Using IBM® PC DOS 5.02

### Purpose

Use this procedure to format (IDE) hard drives (C:>) that have been previously partitioned.

### Tools/Supplies Needed

- ❑ For HmX Analyzer: Software Disk #1 of any program level.
- ❑ For MAXM™ Analyzer: Software Disk #1 of program level 6 A/B or 7A and higher
- ❑ For STKS™ Analyzer: Software Disk #1 of program level 2B or higher

### IBM® PC DOS 5.02 - High Level Formatting Procedure for HmX Analyzer DMS, MAXM™ Analyzer DMS Program Level 6A/B or 7A and Higher, STKS™ Analyzer Program Level 2B and Higher

1. Insert disk #1 of DMS software into drive A.
2. Press Ctrl+Alt+Delete to reboot the system from drive A. Wait for the system to reboot.
3. Use ↓ Enter to select Format C: Drive. Press Enter, the screen displays:

   *WARNING, ALL DATA ON NON-REMOVABLE DISK*
   *DRIVE C: WILL BE LOST!*

   *Proceed with Format? (Y/N)*

4. Press Y then Enter. Once formatting is completed the screen displays:

   *Formatting*

   *Format complete*
   *System Transferred*

   *Volume labels (11 characters, ENTER for none)?*

5. Press Enter. The DMS returns to the Installation Menu.

6. If the Hard Drive only has one Partition (C), Refer to Loading DOS Operating System - IBM® PC DOS 5.02 under Heading 6.1. If there is a D Partition, continue to the next step.

7. Press ↓ to select Format D: Drive. Press Enter, the screen displays:

   *WARNING, ALL DATA ON NON-REMOVABLE DISK*
   *DRIVE D: WILL BE LOST!*

   *Proceed with Format (Y/N)*

8. Press Y Enter. Once formatting is completed, the screen displays:

   *Formatting xxxM*

   *Format complete*
   *Volume Labels (11 characters, Enter for none)?*

9. Press Enter. The DMS returns to the Installation Menu. Refer to Loading DOS Operating System - IBM® PC DOS 3.30 under Heading 6.1.

## 5.3 High Level Formatting A Partitioned (IDE or MFM) Hard Drive (C and D) All Sizes Using IBM® PC DOS 3.0

### Purpose

Use this procedure to format hard drives (C and D) that have been previously partitioned.

### Tools/Supplies Needed

- ❑ For STKS™ Analyzer: IBM® PC DOS 3.30

### IBM® PC DOS 3.0 - High Level Formatting Procedure for STKS™ Analyzer Program Level 1L 1L/1J and Lower

1. Insert the DOS Startup disk if 51/4 inch, or DOS Startup/Operating disk if 3.5 inch.
2. Press Ctrl+Alt+Delete to reboot the system from drive A. Wait for the system to reboot.
3. Type **Format C:/S**. Press Enter, the screen displays:

   *WARNING, ALL DATA ON NON-REMOVABLE DISK*
   *DRIVE C: WILL BE LOST!*

   *Proceed with Format? (Y/N)*

4. Press Y then Enter. Once formatting is completed the screen displays:

   *Formatting*

   *Format complete*
   *System Transferred*

5. Type **format D:**. Press Enter. The screen displays:

   *WARNING, ALL DATA ON NON-REMOVABLE DISK*
   *DRIVE D: WILL BE LOST!*

   *Proceed with Format (Y/N)*

6. Press Y Enter. The screen displays:

   *Formatting xxxM*

7. Once formatting is completed, the screen displays:

   *Format complete*

8. Remove the DOS diskette from the floppy drive and proceed to Loading DOS Operating System - IBM® PC DOS 3.30 under Heading 6.1.

## 6.1 Loading DOS Operating System

### Loading DOS Operating System - IBM® PC DOS 3.30

1. Insert the IBM® PC DOS 3.30 Start-up Disk in drive A and do the following:
   a. Ensure there is either an A:> or C:> on the screen
   b. Type **C:** and press Enter
   c. Type **PROMPT $P$G** and press Enter
   d. Type **MD DOS** and press Enter
   e. Type **Copy A:*.* C:\DOS** and press Enter
      - If using 5.25 inch disks, remove the DOS Startup disk and insert the DOS Operating Disk. Press F4 or Type **Copy A:*.* C:\DOS** and press Enter
   f. Proceed to Heading 6.2 for STKS™ Analyzer DMS Software Installation - STKS™ Analyzer Software Revisions 1L 1L/J or Lower - (IBM® PC DOS 3.3).

### Loading DOS Operating System - IBM® PC DOS 5.02

1. Insert disk 1 of the DMS software into drive A.
2. Reset (re-boot) the DMS.
3. From the Installation Menu, select **Install IBM DOS 5.02 Operating System Files** and follow the instructions on the screen.
4. Proceed to:
   - Heading 6.2 for STKS™ Analyzer DMS Software Installation - STKS™ Analyzer Software Revisions 2B and Higher - (IBM® PC DOS 5.02)
   - Heading 6.3 for MAXM™ Analyzer DMS Software Installation - (DOS 5.02).
   - Heading 6.4 for Coulter® HmX Analyzer DMS Software Installation - (IBM® PC DOS 5.02).

## 6.2 STKS™ Analyzer DMS Software Installation

### STKS™ Analyzer DMS Software Installation - STKS™ Analyzer Software Revisions 1L 1L/J or Lower - (IBM® PC DOS 3.3)

1. Verify that the partition and DOS version are correct.
2. Insert disk #1 of the DMS software into drive A.
3. Turn the computer off and then on.
4. Follow the instructions on the screen.

### STKS™ Analyzer DMS Software Installation - STKS™ Analyzer Software Revisions 2B and Higher - (IBM® PC DOS 5.02)

1. Verify that the partition and DOS version are correct.
2. Insert disk #1 of the DMS Software into drive A.
3. Reset the DMS, it will boot up to a software installation menu.
4. Select **Install STKS - DMS XX Software**.
5. Follow the instructions on the screen.
6. Once the software has loaded, install any additional options (Retics, etc.)

### STKS™ Analyzer Software Options Installation

1. Enabling the Retic Option (Software revision 2A and Higher)

Analyzer/Diluter

a. Turn off the STKS.
b. Remove the I/O CAL card and locate switch S1.
c. Set S1 to enable the Retic mode, refer to the STKS Service Manual.
d. Reinstall the I/O Cal Card.
e. Turn on the STKS.

DMS

a. Insert the Retic Enable disk into drive A.
b. Re-boot the DMS.
c. Follow the instructions on the screen.

2. Enabling the CD4 & CD8 Options.

The CD4 and CD8 Options have been discontinued and are no longer supported by Beckman Coulter

## 6.3 MAXM™ Analyzer DMS Software Installation - (DOS 5.02)

### MAXM™ Analyzer DMS Software Installation - (DOS 5.02)

1. Ensure that the MAXM™ Analyzer System is turned off and there is no power to the DMS.
2. Insert Disk #1 of the MAXM™ Analyzer Instrument Software into drive A.
3. Turn the power back on to the DMS and MAXM™ Analyzer.
4. From the installation Menu, select **Install MAXM™ Analyzer Software**.
5. When prompted, select **USA**, **EUROPEAN** or **JAPANESE** date format.
6. When prompted, select **SCATTER PAK** or **MAXM PAK**.
7. When prompted, select **AUTOLOADER** or **CAP PIERCER**.
8. When prompted, "answer with a **Yes** or **No**", *Is either Data Options or Retic Option currently installed on this system?* and press Enter.
9. Follow the instructions on the screen.
10. After inserting Disk #1 and the program verifies there were no errors with the installation, remove Disk #1 from drive A and re-boot the system. The DMS will proceed to load the software to the 376 CPU in the MAXM™ Analyzer. If the scan LED on the 376 CPU card is extinguished and the DMS is Loading Instrument Software, the system should come up properly. If the MAXM DMS booted up to the Main Menu, proceed to heading MAXM™ Analyzer Software Options Installation. If not, continue to step 11.

**ATTENTION:** If the scan LED on the 376 CPU is blinking and the DMS is not Loading Instrument Software or the DMS gives an error while trying to load the program, the RAM Memory on the Ram Timer Card (daughter board of 376 CPU) needs to be cleared.

11. To clear the RAM Memory perform the following steps:
    a. Simultaneously press the RESET button on the 376 CPU card and the Whole Blood switch actuator on the Sample Module.
    b. Release the RESET button on the 376 CPU while continuing to press the Whole Blood switch actuator.
    c. The 376 CPU scan LED should immediately turn off and then back on. When the LED goes off the second time, release the Whole Blood switch actuator.
    d. The 376 CPU scan LED should remain extinguished until the DMS has completed the 376 download to the MAXM™ Analyzer. If not, repeat the steps to clear RAM Memory.
12. If the customer has additional options that need to be installed, install them at this time. Refer to MAXM™ Analyzer Software Options Installation below.

## MAXM™ Analyzer Software Options Installation

**ATTENTION:** Data Options is automatically installed with the MAXM™ Analyzer Software Installation on revision 8A software and higher when the Retic Option is installed. MAXM™ Analyzer Bi Directional and Data Options

a. Turn off the MAXM™ Analyzer and the DMS.

b. Insert the Option key disk into drive A.

c. Turn the MAXM™ Analyzer and DMS back on.

d. Press Esc to quit or any other key to continue.

e. Press Enter. The DMS displays:

*Installing MAXM Enhancement please wait.....*

Once the option installation is completed, the DMS displays:

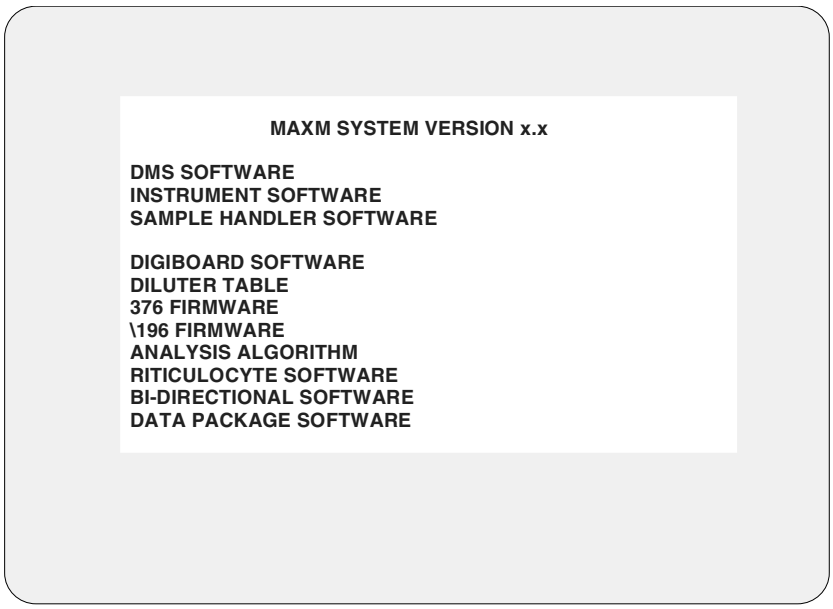
*No fatal error were detected during installation. Please remove the installation disk now and reset the analyzer by turning it off and then back on.*

f. Remove the Option diskette from drive A, then turn the MAXM™ Analyzer and DMS off and back on again.

g. Verify that the option has been installed.

1) Wait until the instrument finishes downloading.

2) View the DMS Set Up window, Select **Special Functions ▸▸ Setup ▸▸ System Setup** to display the software revisions screen.



## MAXM™ Analyzer Retic Option

**ATTENTION:** (Beginning with software revision 8A, Data Options is automatically enabled when the Retic Option is installed.)

**ATTENTION:** When using 8A and higher software, with the Retic Option, a 486 or faster computer must be installed.

1. Turn off the MAXM™ Analyzer and DMS.
2. Insert the appropriate key disk into drive A.
3. Turn the MAXM™ Analyzer and DMS back on.
4. Press Esc to quit or any other key to continue.

   The Retic Option displays additional messages as follows:

   - A 486 computer is required, press Enter to exit installation (only if a 486 computer is not detected). Press Enter
   - When prompted if a BERNOULLI® is installed on your system. Select **Not Available**.
   - All control files will be deleted, press Enter to Continue. Press Enter
   - The Entire database will be deleted, press Enter to continue. Press Enter.
   - The Reproducibility data file will be deleted, press Enter to continue. Press Enter. The DMS displays:

   *Installing MAXM Enhancement please wait.....*

   Once the option installation is completed, the DMS displays:

   *No fatal errors were detected during installation.*
   *Please remove the installation disk now and reset the Analyzer by turning it off and then back on.*

5. Remove the Options diskette from drive A, then turn the MAXM™ Analyzer and DMS off and back on again.
6. Verify that the option package has been installed:
   a. Wait until the instrument is finished downloading.
   b. View the DMS Set Up window, select **Special Functions ▸▸ Set Up ▸▸ System Set Up** to display the software revisions screen.

## MAXM™ Analyzer Retic MRV/MI Option

These parameters cannot be used for reporting patient results in the United States. U.S. customers must sign a “Research Use Only Certificate” before the parameters can be enabled. Disks for the U.S. cause a *Research Use Only* message to be displayed/printed when these parameters are enabled.

1. Ensure the DMS has program level 8B or higher software installed.
2. Turn the MAXM™ Analyzer and DMS off.
3. Insert the MRV/MI enable disk into drive A.
4. Follow the instructions on the screen.
5. Once the option installation is complete, remove the Option diskette from drive A, then turn the MAXM™ Analyzer and DMS off and back on again.
6. Verify that the option package has been installed
   a. Wait until the instrument is finished downloading
   b. View the DMS Set Up window, select **Special Functions ▸▸ Set Up ▸▸ System Set Up** to display the software revisions screen.

## MAXM™ Analyzer Graphic Print Options Installation

(only available for revision 8B or higher) (The MAXM™ Analyzer software defaults to the "Classic" graphic print option.

**ATTENTION:** The installation procedures are the same for the "Classic" Graphic Print Options and the "Enhanced" Graphic Print Options. The only difference is that the prompts you receive reflect either "Classic" or "Enhanced" depending on the option you install. The procedure below reflects the "Classic" (default) option.

1. Ensure the DMS has program level 8B or higher software installed.
2. Turn the MAXM™ Analyzer and DMS off.
3. Insert the Classic Print Options diskette into drive A.
4. Turn the MAXM™ Analyzer and DMS back on.

   The DMS flashes the following message on the screen:

   *INSTALL CLASSIC PRINT OPTION*
   *Press ENTER if you want to install the Classic Print Option*
   *INSTALL CLASSIC PRINT OPTION*
   *LEAVE EXISTING PRINT OPTION INTACT*

5. Press Enter to install the Classic print option. Press Esc or the ↓ to leave the existing print option intact.
6. Once the print option installation is completed the DMS displays:

   *No fatal errors were detected during installation.*
   *Please remove the installation disk now and reset*
   *the Analyzer by turning it off and back on.*

## Updating Options Disks

### Intended Use

The updating options disk feature should only be used to re-use an options disk which has previously been used and identified to a DMS computer. It does not upgrade the options disk to the next revision level of software.

Use the Update Options Disk feature located on the Installation Menu of Disk #1 of the MAXM™ Analyzer software program. It is not necessary to perform this function on Options diskettes that were not previously used.

1. Insert Diskette #1 of the installation diskettes into drive A.
2. Turn the DMS off and back on.
3. On the DMS screen, select Update Option Disk and press Enter. The screen displays:

   *Please insert Option Disk in drive A:*
   *Press any key to continue...*

4. Remove the #1 installation disk and insert the previously used options disk into drive A.

5. Press Enter, the screen displays:

   *Wait... Updating Option Disk*

   Then

   *Please insert Installation Disk #1 in drive A:*
   *Press any key to continue...*

6. Insert diskette #1 of the installation diskettes into drive A and press Enter.

7. Once the DMS returns to the Installation Menu, remove the Base installation diskette from drive A and replace it with the Options diskette. The Options diskette must be reinstalled per the pertinent installation instructions.

## Options Installation Error Trapping

The options installation has extensive error trapping capability. There are two error screens:

The first error screen is displayed if one of the installation checks fails. The error message is:

"*THIS IS AN INVALID OPTION DISKETTE (ERROR CODE:X)"*

Where X is one of the values listed in Table 6.3-1.

The second error message is displayed if, after passing installation checks, a problem is detected while installing (enabling) the option. The main text of this error message reads:

*"AN ERROR OCCURRED DURING INSTALLATION (ERROR CODE: XY)"*

Where X is one of the values listed in Table 6.3-1 and Y is either "1" or "2", indicating at what specific point in the installation the error occurred. This second message is infrequent, since most of the checking is redundant as it was already performed during initialization.

The error messages direct the operators to contact their Coulter representative to report the problem.

Note that the same message is generated in response to an attempt to use an illegal copy of an Options diskette or to an invalid version of DOS or to any of the other isolated problems. In fact, most of the error codes listed in the table are rarely seen as long as legal copies of Installation and Options diskettes are used.

### To Correct The Problem When An Error Code Appears:

1. Reformat the hard drive
2. Reinstall the Installation and Option diskettes
3. If the error code still exists, acquire a new set of installation disks and reinstall the MAXM™ Analyzer, DMS software.

**Table 6.3-1 MAXM™ Analyzer Software Options Installation Error Codes**

| Error Code | Explanation |
|---|---|
| **A** | Invalid version of DOS, IBM® PC DOS version 5.02 required by installation and options installation procedures. Check for version 5.02. |
| **B** | Unable to read serial number from drive A. This could happen if, for example, floppy disk was not formatted with DOS 5.02. |
| **C** | Unable to read serial number from drive C. |
| **D** | BIOS or disk controller does not support reporting of disk parameters. |
| **E** | Unable to read root directory (either installation floppy disk or hard disk) |
| **F** | Floppy is used and serial numbers of floppy disk and hard disk do not match. |
| **G** | Command processor (command.com) not found on installation floppy. (Installation process requires that installation floppy disk be bootable) |
| **H** | Memory allocation error in course of options installations. |
| **I** | Internal software error which does not explain occurrence, simply localizes it. |
| **J** | Illegal copy - result of running a copy of options diskette. Options diskettes are copy protected in a fashion similar to that employed for service diskettes. Testing should confirm that an options diskette will not function as a service diskette. |
| **K** | Error writing serial number to drive A. First time options installation is performed, serial number of drive C is copied to installation floppy. |
| **L** | Error making installation floppy as used. First time options installation is performed, installation floppy is marked as used. |
| **M** | Error in writing value which serves to enable option. |
| **N** | Unable to find C:\DMS subdirectory. |
| **P** | Unable to open C:\DMS\Worklist.cfg, this error applies only to Data Options installation which updates file with labels for additional parameters presented and stored when Data Options is enabled. |
| **Q** | Memory allocation error in course of updating C:\DMS\Worklist.cfg. |
| **R** | Unable to find C:\DMS\Worklist cfg. |
| **Z** | Error in writing serial number to drive C:. This error can only take place in course of a base installation at the beginning of which the serial number from installation diskette 1 is copied to drive C:. |

## 6.4 Coulter® HmX Analyzer DMS Software Installation - (IBM® PC DOS 5.02)

1. Ensure that the HmX Analyzer and DMS are turned off
2. Insert Disk 1 of the HmX Analyzer Installation Software into drive A.
3. Turn the power back on to the Analyzer and DMS.
4. From the Installation Menu, select **Install HmX Analyzer Software.**
5. When prompted, select **USA**, **EUROPEAN** or **JAPANESE** date format.
6. When prompted, select **SCATTER PAK** or **MAXM PAK**.
7. When prompted, select **AUTOLOADER** or **CAP PIERCER**.
8. Follow the instructions on the screen.
9. After inserting Disk #1 and the program verifies there were no errors with the installation, remove Disk #1 from drive A and re-boot the system. The DMS will proceed to load the software to the 376 CPU in the HmX Analyzer. If the scan LED on the 376 CPU card is extinguished and the DMS is Loading Instrument Software, the system should come up properly. If the HmX Analyzer DMS booted up to the Main Menu, the software has transferred to the 376 CPU and Sample Handler properly, the installation is complete. If not, continue to step j.

   **ATTENTION:** If the scan LED on the 376 CPU is blinking and the DMS is not Loading Instrument Software or the DMS gives an error while trying to load the program, the RAM Memory on the Ram Timer Card (daughter board of 376 CPU) needs to be cleared.

**To clear the RAM Memory perform the following steps:**

1. Simultaneously press the RESET button on the 376 CPU card and the Whole Blood switch actuator on the Sample Module.
2. Release the RESET button on the 376 CPU while continuing to press the Whole Blood switch actuator.
3. The 376 CPU scan LED should immediately turn off and then back on. When the LED goes off the second time, release the Whole Blood switch actuator.
4. The 376 CPU scan LED should remain extinguished until the DMS has completed the 376 download to the HmX Analyzer. If not, repeat the steps to clear RAM Memory.

## 7.1 User Password Locations

### STKS™ Analyzer User Password Location

#### STKS™ Analyzer DMS Software Revision 2a and Higher.

**C:\DMS\Worklist.cfg.....Location and File Name**

To access this file, at the C:> prompt enter the following:
**cd\dms** Enter
**type Worklist.cfg** Enter

The file should read:

000011000
000010100
000000000
*CASS_POS_NUMBER
12
*CASS_POS_NUMBER
00
05
10
12
*PRN_SETUP
012110010111213
*DIGIBOARD_CL
D800
D000
C800
*DIGIBOARD_SEGMENT
D800
***SUPERPASS**
***Marge*** **.....(example [*Marge*] is the SUPERVISOR PASSWORD)**
*SCREEN_SAVER\

#### STKS™ Analyzer 1 series software revision 1L 1L/J and lower

At the C:> prompt enter the following:

D: Enter
type data.pas Enter

## MAXM™ Analyzer User Password Location

### MAXM™ Analyzer Supervisor password for DMS software revision 8B and higher

At the C:> prompt enter either of the following:

- type C:\D_drive\data.pas Enter

.....or.....

- cd\D_drive Enter
  type DATA.PAS Enter

## HmX Analyzer User Password Location

### HmX Analyzer Supervisor Password for DMS Software Revision 1A and Higher

At the C:> prompt enter the following

- type C:\D_drive\data.pas Enter

.....or.....

- cd\D_drive Enter
  type DATA.PAS Enter

## 8.1 Parallel Card Installation, Coulter® MAXM™ Analyzer and HmX Analyzer Series DMS (Only)

### Purpose

Use this procedure to install a Parallel card into the DMS and to install an optional Graphic Printer. The Parallel card is designed to be used as a second parallel communication port with the MAXM™ Analyzer - software revision 7A and higher, MAXM™ Autoloader Analyzer - software revision 7A and higher, HmX Analyzer and HmX Autoloader Analyzer only, allowing the instrument to function with two Graphic Printers.

### Tools/Supplies Needed

- ❑ Parallel Card
- ❑ Graphic Printer
- ❑ Parallel Cable

1. Parallel Card Hardware Installation

   a. Unpack the Parallel card and inspect it to ensure the jumpers are configured as follows: Refer to Table 8.1-1

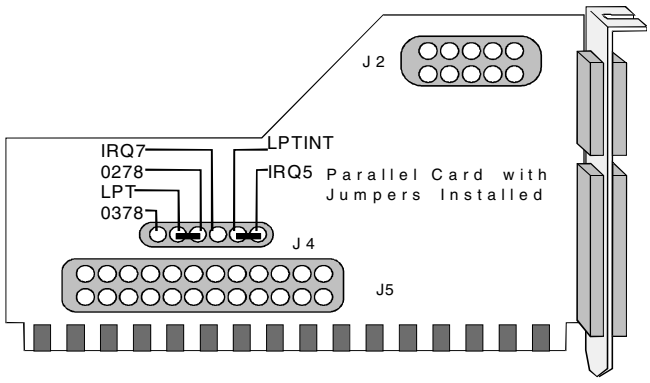
      J2 - No jumpers used

      J4 - LPT to 0278

      LPTINT to IRQ5

      J5 - No jumpers used

**Figure 8.1-1**




   b. Turn off power to the Analyzer, the current Graphic Printer and DMS computer. Remove the power cord from the computer.

   c. Set the computer monitor aside. Disconnect the monitor cables if necessary.

   d. Remove the computer cover.

e. Remove the cover for the expansion slot where the Parallel card is to be installed by removing the single screw at one end of the expansion slot cover.

f. Install the Parallel card into the specified slot for the specific computer as called out in the CMOS Setup, Jumper configuration and Expansion Slot Assignment Section of this document. Make sure the card is inserted completely into the connector and secure it in place with the screw removed from the expansion slot cover.

g. Install the DMS computer cover back in place.

h. Put the computer monitor back in place and reconnect it if required.

i. Connect the new parallel cable to the new LPT2 connector on the computer and the other end to the optional Graphics Printer.

**ATTENTION:** The Fujitsu® DL3700 Color Printer does not meet the requirements for the optional Graphic Ticket Printer, Ticket Print Mode on the MAXM™ Analyzer and has not been qualified for use in any mode with the HmX Analyzer.

j. Reconnect the power cord to the DMS computer.

k. Turn the power on to the Analyzer, DMS and peripheral devices.

2. DMS Software Configuration for the Optional Graphic Printer with no single ticket printer attached to the DMS.

a. From the DMS Main menu, select **Special Functions ▸▸ Set UP ▸▸ Sample Analysis Set Up**.

b. Type in the supervisor password, “xxxxx”, and select **Print Options ▸▸ Optional Printer.**

c. Press Spacebar to select **<Y>**, which enables the optional Graphic Printer.

3. DMS Software Configuration for the Optional Graphic Printer with single ticket printer attached to the DMS Digiboard or Digibox cable P2

a. Select **Special Functions ▸▸ Setup ▸▸ Sample Analysis Set Up**.

b. Type in the supervisor password, “xxxxx”, and select **Print Options ▸▸ Ticket Options**.

c. Toggle Spacebar to select <N> under the Ticket Printer Connected field. The optional Graphics Printer will operate if <Y> is selected in the Ticket Printer Connected field and F2 is pressed.

4. Test the configuration

a. Select **Sample Analysis ▸▸ Run Samples**.

b. Press F2, the optional Graphic Printer connected to LPT1 prints the Ticket Format data.

c. Press F4, the Graphic Printer connected to LPT2 prints the Scatterplot/Histogram data.

## 9.1 DMS Cover

### Removal

1. Turn off the power to the DMS and all peripheral devices and unplug the power cable.
2. Move the monitor off of the computer where applicable. If necessary, disconnect the monitor cables.
3. If the DMS has a key lock, insert the key and unlock the case of the DMS from the chassis.
4. Remove the cover mounting screws, usually located at the back of the DMS.
5. Carefully remove the cover from the DMS, depending on the computer either by:
   - sliding the cover toward the front
   - Lifting the back of the cover up to release it from the catches on the face plate.

### Replacement

1. Ensure all expansion cards are firmly in place and secured.
2. Ensure all cables are seated in place and routed out of the way of the cover or any moving parts such as a cooling fan.
3. Carefully install the cover onto the DMS depending on the computer either by:
   - Sliding the cover on front to back
   - Inserting the cover tabs under the face plate catches and lowering the back of the cover into place
4. Install the cover mounting screws.
5. Lock the cover lock if applicable.
6. Place the monitor back onto the DMS where applicable and reconnect the external cables if removed.
7. Connect all peripheral and power cables.
8. Power the DMS and peripherals back on.

## 9.2 Digiboard 4 Channel I/O Card

### Removal

1. Perform the DMS cover removal procedure.
2. Locate the digiboard, (refer to section 2 for board location).
3. Loosen the two screws on either side of the cable connector at the back of the computer base and remove the cable from the digiboard.
4. Remove the screw securing the digiboard cable connector plate to the chassis of the DMS.
5. Carefully remove the digiboard by pulling straight up to release it from the expansion slot.

### Replacement

1. Inspect the jumpers on the digiboard for proper placement. (Refer to Table 9.2-1 for jumper configuration)
2. Refer to section 2 for the correct expansion slot assignment of the digiboard. Carefully position the digiboard into the expansion slot and seat it firmly into the connectors.
3. Install the mounting screw to secure the digiboard cable connector plate to the chassis of the DMS.
4. Connect the digi cable to the digiboard and secure it in place with the two screws on either side of the cable connector.
5. Perform the DMS cover replacement procedure.

**Table 9.2-1 DMS Digiboard Jumper Configuration**

| Jumper | Setting | Purpose |
|---|---|---|
| J2 | 1-2 | I/O port |
| J3 | 1-2 | I/O port |
| J4 | 1-2 | I/O port |
| J11 | 1-2 | |
| J15 | 1-2 | Memory mapping |
| J16 | 1-2 | Memory mapping |
| J17 | 1-3 | Memory mapping |

| Digiboard Daughter Card Jumper Configuration | | |
|---|---|---|
| **Jumper** | **Setting** | **Purpose** |
| J1 | 1-2 | EPROM size |
| J2 | 1-2 | EPROM size |

## 9.3 Video Graphics Adapter (VGA Card)

### Removal

1. Perform the DMS cover removal procedure.
2. Locate the Video Graphics Adapter Card. (Refer to section 2 for board location)
3. Loosen the two screws on either side of the monitor cable connector on the DMS and remove the cable from the card.
4. Remove the screw securing the cable connector plate of the video card to the chassis of the DMS.
5. Carefully remove the video card by pulling straight up to release it from the expansion slot.

### Replacement

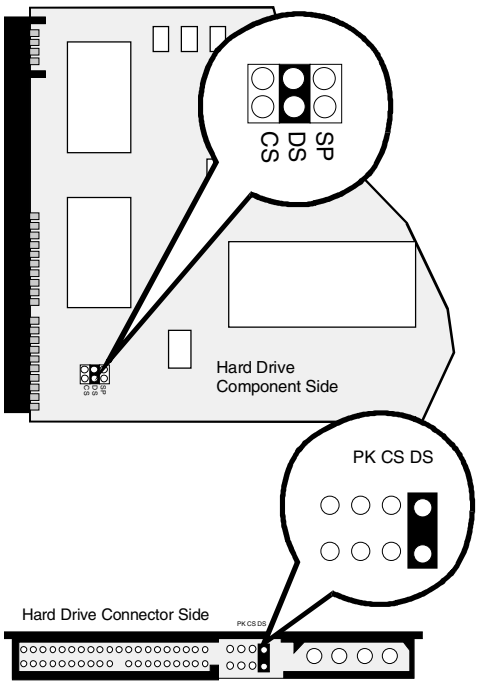
1. Refer to section 2 for expansion slot assignment of the digiboard. Carefully position the video graphics adapter card into the expansion slot and seat it firmly into the connectors.
2. Install the mounting screw ad the edge of the cable connector plate.
3. Connect the monitor cable to the video card and secure it in place with the two screws on either side of the cable connector.
4. Perform the DMS cover replacement procedure.

## 9.4 Hard Disk Drive

### Removal

1. Refer to the computer manufacturer users manual for removal and replacement of the hard disk drive.
2. Make sure the IDE configuration jumper is in the DS position. (Refer to Figure 9.4-1 and Table 9.4-1 for location and definition of jumper positions.)

**Figure 9.4-1 IDE Hard Drive Jumper Positions (Quantum)**




3. Refer to Appendix A for MAXM™ Analyzer drive size and setup information
4. Refer to Appendix B for STKS™ Analyzer drive size and setup information
5. Refer to Appendix C for HmX Analyzer drive size and setup information
6. Refer to the Partition Information Section of this document for partitioning procedures.
7. Refer to the Heading High Level Formatting A Partitioned (IDE or MFM) Hard Drive (C and D) All Sizes Using IBM® PC DOS 3.0 for STKS 1L formatting procedures. Refer to the Heading High Level Formatting A Partitioned (IDE) Hard Drive (C:>) All Sizes Using IBM® PC DOS 5.02 for STKS 2A and higher, MAXM 8D and higher and all HmX software.
8. Refer to Heading STKS™ Analyzer DMS Software Installation for loading STKS DMS software procedures. Refer to Heading MAXM™ Analyzer DMS Software Installation - (DOS 5.02) for loading MAXM DMS software procedures. Refer to Heading Coulter® HmX Analyzer DMS Software Installation - (IBM® PC DOS 5.02) for loading HmX DMS software procedures.

**Table 9.4-1 IDE Hard Drive Configuration Jumpers (Quantum)**

| Jumper Name | Definition | Intended Use |
|---|---|---|
| **DS**<br>**Use this setting** | **Drive Select** | **Master drive in a single or dual drive configuration.** |
| *SP*<br>*do not use* | *Slave Present* | *Used with the DS jumper on the Master drive when a Slave drive in a two drive system does not support DASP, [drive active/drive 1 present]* |
| *CS*<br>*do not use* | *Cable Select* | *Used when the cable determines the drive ID [jumpers on both drives are setup the same]* |
| *DM*<br>*do not use* | *Drive Mode* | *Only used to provide compatibility mode with Quantum ProDrive 40/80 AT disk drives.* |
| *PK* | *Park [spare]* | *Does not enable any feature. Used to provide a spare location to any jumper removed during a configuration change.* |
| *Rsvd*<br>*do not use* | *Reserved* | *Does not enable any customer feature and should not be used or have a jumper placed on it.* |

**ATTENTION:** The rows in italics on Table 9.4-1 are for informational purposes only. These settings are not used on the STKS™ Analyzer, MAXM™ Analyzer or HmX Analyzer Series DMS hard drives. The DS jumper in bold is the only jumper used for STKS™ Analyzer, MAXM™ Analyzer or HmX Analyzer Series DMS hard drives.

# 9.5 DMS Computer RAM Memory

## DMS Memory SIMM

### Removal

1. Perform the DMS cover removal procedure.
2. Refer to Heading CMOS SETUP, JUMPER AND EXPANSION SLOT CONFIGURATION for the Memory SIMM Location of the appropriate computer being serviced.
3. Release the SIMM by pressing on the spring clips on either side of the SIMM socket.
4. Angle the SIMM away from its locked position and carefully remove it from the SIMM socket.

### Replacement

1. Refer to Heading CMOS SETUP, JUMPER AND EXPANSION SLOT CONFIGURATION for the Memory SIMM Location of the appropriate computer being serviced.
2. Carefully insert the SIMM straight into the simm socket and push it back until it locks in place.
3. Perform the DMS cover replacement procedure.
4. Refer to the manufacturer users guide to determine if Simms require replacement in pairs.

## 2MB RAM Card……Intel 301Z only

### Removal

1. Perform the DMS cover removal procedure.
2. Locate the 2MB RAM Card. (Refer to Heading CMOS SETUP, JUMPER AND EXPANSION SLOT CONFIGURATION for board location)
3. Remove the screw securing the expansion slot cover plate of the RAM Card to the chassis of the DMS.
4. Carefully remove the RAM Card by pulling straight up from the expansion slot.

### Replacement

1. Refer to Heading CMOS SETUP, JUMPER AND EXPANSION SLOT CONFIGURATION for the RAM Card Location of the appropriate computer being serviced.
2. Carefully position the RAM Card into the expansion slot and seat it firmly into the connectors.
3. Install the mounting screw of the expansion slot cover plate to secure the card in place.
4. Perform the DMS cover replacement procedure.

## 9.6 Disk Drive Controller Card……Intel 301Z only

### Removal

1. Perform the DMS cover removal procedure.
2. Locate the Disk Drive Controller Card. (Refer to section 2 for board location)
3. Remove the screw securing the expansion slot cover plate of the Controller card to the chassis of the DMS.
4. Make note of the position of the ribbon cables and the pin 1 location on the controller card and cable connectors. Remove the ribbon cables from the card only.
5. Carefully remove the Controller Card by pulling Straight Up from the expansion slot.

### Replacement

1. Refer to section 2 for the Disk Drive Controller Card Location of the appropriate computer being serviced.
2. Carefully position the Disk Drive Controller Card into the expansion slot and seat it firmly into the connectors.
3. Install the mounting screw of the expansion slot cover plate to secure the card in place.
4. Connect the ribbon cables from the hard drive and floppy drive to the appropriate connectors on the Controller Card making sure of the pin 1 cable and connector locations.
5. Perform the DMS cover replacement procedure.

# 9.7 Floppy Disk Drive, Power Supply and Motherboard (System Card)

## Floppy Disk Drive

Refer to the computer manufacturer users manual for the removal and replacement of the floppy disk drive.

## DMS Power Supply

Refer to the manufacturers users manual for removal and replacement of the Power Supply.

## Motherboard (System Card)

- Refer to the manufacturer users manual for removal and replacement of the Motherboard/System Card.
- Refer to Appendix A.4, Table A.4-1, for Approved BIOS and Motherboard/System Card revisions.
- Refer to Section 2 for correct jumper placement on the Motherboard/System Card.
  - Table 2.1-2, VCS Analyzer 301Z Jumper Configuration
  - Table 2.1-5, STKS™ Analyzer Intel® 301Z Jumper Configuration
  - Table 2.2-1, STKS™ Analyzer, MAXM™ Analyzer 300SX-16 Jumper Configuration
  - Table 2.3-4, 300SX-20 Jumper Configuration
  - Table 2.4-7, 486DX33 Classic R Jumper Configuration for Motherboards PBA-612478-001 and PBA 612478-002
  - Table 2.5-3, NECDX33 Jumper Configuration
  - Table 2.6-6, Intel® Classic R Plus Jumper Settings
  - Table 2.7-12, Jumper Settings: RadiSys 100/166MHz Pentium Computer Motherboard Jumper Blk J7K1
  - Table 2.8-12, Jumper Settings: RadiSys Pentium Tower Computer Motherboard Jumper Blk J7K1

## 10.1 Verification of Transmission to Host Interface Procedure

### Tools/Supplies Needed

- ❑ 9 to 25 Pin Connector.....Radio Shack Part Number 26-265
- ❑ Null Modem Adapter.....Radio Shack Part Number 26-264
- ❑ Laptop Computer
- ❑ P3 Cable from DMS
- ❑ Host Simulator (DMS Host) Program

### Setup

- Connect the null modem adapter to the COM1 Serial Port on the laptop computer.
- Connect the 9 to 25 pin adapter to the null modem adapter.
- Connect the P3 cable from the DMS to the 9 to 25 pin adapter.
- (Optional)...Connect a parallel printer to the parallel port on the laptop computer.

### Messages on the Laptop Computer Received from the DMS

DLEA Transmission accepted - send next

DLEB Transmission accepted - don't send more

DLEC Transmission rejected - please retry

DLED Transmission rejected - please abort

### Verification of Transmission to Host procedure

#### At the Laptop

1. Insert the DMSHOST disk into drive A.
2. At the A:> prompt type:

   **cd/dmshost** Enter

   **dmshost** Enter
3. Set up communications parameters by pressing Shift+F10. When setup is complete press Esc one time.

#### To Receive Data from the DMS:

1. From the screen after pressing Esc in step 3, press F10. This is where the data from the DMS is received on the left half of the laptop screen.
2. (Optional) If you connect a parallel printer to the printer port on the laptop it will print the data stream as it is transmitted to the laptop.

   F5 will toggle the printer on or off.

#### To Download from the Laptop to the Host Worklist:

1. Select **Host Worklist** on the DMS (in DMS SETUP, in host communications, handshake must be **yes**)
2. Press Esc to enter data on the Host Worklist on the laptop computer.

3. F2 will allow you to edit or enter new data on the worklist.
4. The Enter key will tag the samples.
5. Press F10 to get transmit options which are:
    - Current Record
    - Tagged Records
    - Range
6. Press Enter to transmit to the host worklist on the DMS.
7. to Exit the program press the Esc key on the laptop computer continuously until you are back to the A:> prompt on the laptop computer.

## 11.1 DMS Computer Parts List

**Table 11.1-1 Computer Bases**

| Part Number | Description and Computer Model |
|---|---|
| 2016829 | RadiSys Pentium Tower |
| 2016799 | RadiSys 100 MHz Pentium |
| 2016687 | Intel® 486 Classic R Plus |
| 2016581 **not available** | Intel® 486 Classic R.....**no longer available** |
| 2016897 **not available** | NEC Powermate® 486.....**no longer available** |
| 2016475 | Intel386™ 300SX20 |
| 2016451 **not available** | Intel386™ 300SX16.....**no longer available** |
| 2016610 **not available** | Intel® 301Z computer with (MFM hard drive).....**no longer available** |
| 2016350 | Intel® 301Z 386 computer with (IDE hard drive |

**Table 11.1-2 Computer Power Supplies**

| Part Number | Description and Computer Model |
|---|---|
| 4004111 | RadiSys Pentium Tower |
| 4004111 | RadiSys 100 MHz Pentium |
| 2016595 | Intel® 486 Classic R Plus |
| 2016595 | Intel® 486 Classic R |
| 2016611 **not available** | NEC Powermate® 486.....**no longer available** |
| 2016470 | Intel386™ 300SX20 |
| 2016470 | Intel386™ 300SX16 |
| 2016383 | Intel® 301Z switching Power Supply for both 301Z (MFM & IDE hard drive) computers |

**Table 11.1-3 Computer Floppy Drives**

| Part Number | Description and Computer Model |
|---|---|
| 2016804 | RadiSys Pentium Tower 3.5 inch |
| 2016804 | RadiSys 100 MHz Pentium 3.5 inch |
| 2016653 | Intel® 486 Classic R Plus 3.5 inch |
| 2016653 | Intel® 486 Classic R 3.5 inch |

**Table 11.1-3 Computer Floppy Drives *(Continued)***

| Part Number | Description and Computer Model |
|---|---|
| 2016655 **not available** | NEC Powermate® 486 3.5 inch.....**no longer available** |
| 2016462 | Intel386™ 300SX20 3.5 inch |
| 2016462 **not available** | Intel386™ 300SX16 3.5 inch.....**no longer available** |
| 2016605 | Intel® 301Z IDE 3.5 inch |
| 2016381 | Intel® 301Z MFM 5.25 inch |

**Table 11.1-4 Computer System (Mother) Boards**

| Part Number | Description and Computer Model |
|---|---|
| 2016805 | RadiSys Pentium Tower |
| 2016805 | RadiSys 100 MHz Pentium |
| 2016700 **not available** | Intel® 486 Classic R Plus .....**no longer available** |
| 2016654 **not available** | Intel® 486 Classic R .....**no longer available** |
| 2016608 **not available** | NEC Powermate® 486 .....**no longer available** |
| N/A | Intel386™ 300SX20 |
| N/A | Intel386™ 300SX16 |
| 2016451 | Intel® 301Z (MFM) |
| 2016451 | Intel® 301Z (IDE) |

**Table 11.1-5 Computer Batteries**

| Part Number | Description and Computer Model |
|---|---|
| 2016607 | RadiSys Pentium Tower, RadiSys 100 MHz Pentium, Intel® 486 Classic R Plus, Intel® 486 Classic R |
| 2016606 **not available** | NEC Powermate® 486 .....**no longer available** |
| 2016600 | Intel386™ 300SX20 |
| 7260019 **not available** | Intel386™ 300SX16, Intel® 301Z.....**no longer available** |

**Table 11.1-6 Computer Riser Cards**

| Part Number | Description and Computer Model |
|---|---|
| 2016699 **not available** | Intel® 486 Classic R Plus .....**no longer available** |
| 2016664 **not available** | Intel® 486 Classic R .....**no longer available** |

**Table 11.1-7 Computer Hard Disk Drives**

| Part Number | Description and Computer Model |
|---|---|
| 2016854 | 8.4GB Hard Drive: For RadiSys Pentium Tower, RadiSys 100 MHz Pentium, Intel® 486 Classic R Plus, Intel® 486 Classic R, NEC Powermate® 486, Intel386™ 300SX20, Intel386™ 300SX16, Intel® 301Z (IDE) |
| 2016828 **Not available use 2016854** | 3.2GB Hard Drive: For RadiSys Pentium Tower, RadiSys 100 MHz Pentium, Intel® 486 Classic R Plus, Intel® 486 Classic R, NEC Powermate® 486, Intel386™ 300SX20, Intel386™ 300SX16, Intel® 301Z (IDE) |
| 2016801 **Not available use 2016854** | 1.080GB Hard Drive: For RadiSys Pentium Tower, RadiSys 100 MHz Pentium, Intel® 486 Classic R Plus, Intel® 486 Classic R, NEC Powermate® 486, Intel386™ 300SX20, Intel386™ 300SX16, Intel® 301Z (IDE).....no longer available |
| 2016715 **Not available use 2016854** | 850MB Hard Drive: For Intel® 486 Classic R Plus, Intel® 486 Classic R, NEC Powermate® 486, Intel386™ 300SX20, Intel386™ 300SX16, Intel® 301Z (IDE).....no longer available |
| 2016365 | 40MB Hard Drive (MFM) Intel® 301Z |

**Table 11.1-8 Computer Memory**

| Part Number | Description and Computer Model |
|---|---|
| 4837393 | RadiSys Pentium Tower, RadiSys 100 MHz Pentium |
| 4837096 | Intel® 486 Classic R Plus, Intel® 486 Classic R .....2Mx36 70ns |
| 4837122 **not available** | NEC Powermate® 486.....1M 70ns.....**no longer available** |
| 4836937 **not available** | Intel386™ 300SX20, Intel386™ 300SX16.....1M 100ns.....**no longer available** |
| 2016378 | Intel® 301Z Memory Card |

**Table 11.1-9 Computer Drive Controllers**

| Part Number | Description and Computer Model |
|---|---|
| 2016502 **not available** | Intel® 301Z (MFM).....**no longer available** |
| 2016585 **not available** | Intel® 301Z (IDE).....**no longer available** |

**Table 11.1-10 Computer VGA/Video Cards**

| Part Number | Description and Computer Model |
|---|---|
| 2016897 | RADISys Pentium Tower, RADISys 100 MHz Pentium |
| 2016875R | RADISys Pentium Tower, RADISys 100 MHz Pentium |
| 2016304 | Intel® 301Z (IDE) |

**Table 11.1-11 Computer Monitors**

| Part Number | Description and Computer Model |
|---|---|
| 2016896 | LCD Color Monitor 15” for RadiSys Tower Only 90-264 VAC SyncMaster 175B TFT |
| 2016889R | LCD Color Monitor 15” for RadiSys Tower only 90-264 VAC SyncMaster 150M FT |
| 2016872 | Tatung 15” Color Monitor for STKS™ Analyzer & MAXM™ Analyzer DMS<br>comes with adapter PN 2016871 for Tatung and Iiyama Vision Master required for older computer models. |
| 2016870 | LCD Color Monitor 15” for RadiSys Tower only 90-264 VAC |
| 2016830 | LCD Color Monitor 14” for RadiSys Tower only 90-264 VAC |
| 2016757 | iiyama Vision Master 350,110/220 VAC |
| 2016757R | iiyama Vision Master 350, 110/220 VAC |
| 2016684 **Not available use 2016757 or 2016872** | Tatung 15” Color Monitor for STKS™ Analyzer & MAXM™ Analyzer DMS - Meets Englands Specifications, can also be used in US, Canada & Japan |
| 2016681 **Not available use 2016757 or 2016872** | Tatung 14” Color Monitor for STKS™ Analyzer & MAXM™ Analyzer DMS for US, Canada & Japan |

**Table 11.1-12 Computer Keyboards and Keyboard Covers**

| Part Number | Description and Computer Model |
|---|---|
| 2016525 | Keyboard |
| 2016563 | Keyboard Cover (small) |
| 2016491<br>**not available** | Keyboard Cover (large).....**no longer available** |

**Table 11.1-13 Computer Bar-Code Wands**

| Part Number | Description and COMPUTER MODEL |
|---|---|
| 6915312 | Welch Allyn barcode wand....works on all STKS™ Analyzer and MAXM™ Analyzer Systems |
| 2016728 | Barcode Wand HBCR-8300 or QBSW-8264 for STKS™ Analyzer 2A and higher and all MAXM™ Analyzer Systems |
| 2016512 | 115 VAC Barcode Wand Interface.....for HBCR-8300 and QBSW-8264 barcode wands |
| 2016515 | 220 VAC Barcode Wand Interface.....for HBCR-8300 and QBSW-8264 barcode wands |
| 2016197 | Barcode Wand Holder for HBCR-8300 and QBSW-8264 barcode wands |

**Table 11.1-14 Computer Miscellaneous Hardware**

| Part Number | Description and Computer ModeL |
|---|---|
| 2016577 | A/B manual data switch, approved for MAXM™ Analyzer only |
| 2016591 | Serial/Parallel expansion board, Approved for MAXM™ Analyzer and HmX Analyzer only |
| 6028717 | Digi 4 port cable box (CE) use with CE Cables only |
| 2016824 | Digiboard |
| 6856995 | STKS™ Analyzer communications adapter |
| 2016588 | Kit, Hard drive mounting for 3.5” IDE hard drive |

**Table 11.1-15 Computer Cables**

| Part Number | Description and Computer Model |
|---|---|
| 6028718 | Cable, Power; PC to monitor (CE) |
| 6027225 | Cable, Power: 110 VAC, Universal, shielded, (CE) |
| 6028714 | P1 Cable to MAXM J1, (CE), use with PN 6028717 Digi 4 port cable box (CE) |
| 6028715 | P1 Cable to STKS COMM adapter, (CE), use with PN 6028717 Digi 4 port cable box (CE) |
| 6028711 | P2 Cable to Serial Printer, (CE), use with PN 6028717 Digi 4 port cable box (CE) |

**Table 11.1-15 Computer Cables *(Continued)***

| Part Number | Description and Computer Model |
|---|---|
| 6028712 | P4 Cable to Barcode Wand, (CE), use with 6028717 Digi 4 port cable box (CE) |
| 6028880 | Parallel Cable, (graphics printer) 8' (CE) Must use with MT150/24C Color printer |
| 6028504 | Parallel Cable, (graphics printer), 10' (CE) |
| 6028072 | Digiboard Cable, STKS™ Analyzer (Non CE) |
| 7000060 | Digiboard Cable, MAXM™ Analyzer, (Non CE) |
| 6028177 | Parallel Cable, (graphics printer), 10', (Non CE) |
| 6027471 **not available** | Parallel Cable, (graphics printer), 6', (Non CE).....**no longer available** |
| 6029021 | Speaker harness, includes speaker for RadiSys Pentium computers |
| 6021441 **not available** | Plug, Power, Male, 220 VAC, 6A.....**no longer available** |
| 6028273 | Cable, Line cord adapter |
| 6028478 | Cable, Hard disk drive controller |
| 6028479 | Cable, Hard drive LED adapter |
| 6028598 | Cable, RIB/FL, Motherboard to floppy drive, generic, will work with all computers, connector is not keyed. Color code on ribbon cable identifies pin #1. |
| 2016550 | Keyboard cable adapter, PS2 |

**Table 11.1-16 Computer....Tools**

| Part Number | Description |
|---|---|
| 6417073 **not available** | The Troubleshooter Kit Rev 4.04.....**no longer available** |
| 6417820 | The Troubleshooter Kit Rev 5.02, required for use on RadiSys pentium computers |
| 2016642 | Digiboard Diagnostic Kit |
| 2016652 | Floppy drive cleaning Kit |
| 6915003 | McAfee Viruscan Rev. 3.1.7 (released rev. as of August 19, 1998) |
| 6913023 | OPTune Hard disk Optimizer |
| 6913165 | Program Disk, IBM® PC DOS 3.30 |
| 6414539 **not available** | Disk Manager - Seagate.....**no longer available** |
| 6415262 | Service Disk 2 |
| 6915392 | Service Disk 3 |

## A.1 MAXM™ Analyzer DMS Computer Drive Configuration

**Table A.1-1 MAXM™ Analyzer DMS Computer.Drive Configuration**

| Drive PN | Base PN | Drive Setup Information | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Size | Computer & Drive | CYL | HD | PRE | LZ | SEC | TYPE | 8D w/Retic | 8DJ | |
| | | | | | | | | | | |
| | | | | | **Intel® 300SX 16 PN 2016451** | | | | | |
| 40MB<br>PN 2016466<br>LPS 40AT | Intel® 300 SX16<br>PN 2016451 | 965 | 5 | -1 | 1 | 17 | 33 | | | |
| 49MB<br>PN 2016646<br>52AT | Intel® 300 SX16<br>PN 2016451 | 751 | 8 | -1 | 1 | 17 | 48 | | | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 300 SX16<br>PN 2016451 | 723 | 13 | 0 | 0 | 51 | 49 | | | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 300 SX16<br>PN 2016451 | 1011 | 15 | 0 | 1011 | 44 | 48 | | | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 300 SX16<br>PN 2016451 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 1.080GB<br>PN 2016801 | Intel® 300 SX16<br>PN 2016451 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 3.2GB<br>PN 2016828 | Intel® 300 PN 2016451SX16 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 8.4GB<br>PN 2016854 | Intel® 300 SX16<br>PN 2016451 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| | | | | | **Intel® 300 SX20 PN 2016475** | | | | | |
| 40MB<br>PN 2016466<br>LPS 40AT | Intel® 300 SX20<br>PN 2016475 | 965 | 5 | -1 | 1 | 17 | 33 | | | |
| 49MB<br>PN 2016646<br>52AT | Intel® 300 SX20<br>PN 2016475 | 751 | 8 | -1 | 1 | 14 | 25 | | | |

**Table A.1-1 MAXM™ Analyzer DMS Computer.Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Size | Computer & Drive | CYL | HD | PRE | LZ | SEC | TYPE | 8D w/Retic | 8DJ | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 300 SX20<br>PN 2016475 | 723 | 13 | 0 | 0 | 51 | 49 | | | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 300 SX20<br>PN 2016475 | 1011 | 15 | 0 | 1011 | 44 | 48 | + | + | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | |
| 1.080GB<br>PN 2016801 | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | |
| 3.2GB<br>PN 2016828 | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | |
| 8.4GB<br>PN 2016854 | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | |
| | | | | | | | | | | |
| **Intel® 486DX33 Classic R PN 2016581** | | | | | | | | | | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 486DX33 Classic R<br>PN 2016581 | 723 | 13 | 0 | 0 | 51 | 19 | + | + | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 486DX33 Classic R<br>PN 2016581 | 1011 | 15 | 0 | 1011 | 44 | 2 | + | + | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 1.080GB<br>PN 2016801 | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 3.2GB<br>PN 2016828 | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 8.4GB<br>PN 2016854 | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |

**Table A.1-1 MAXM™ Analyzer DMS Computer.Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Size | Computer & Drive | CYL | HD | PRE | LZ | SEC | TYPE | 8D w/Retic | 8DJ | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| **NEC Powermate® 486DX33** | | | | | | | | | | |
| 234MB<br>PN 2016586<br>LPS 245AT | NEC Powermate® 486DX33<br>PN 2016597 | 723 | 13 | 0 | 0 | 51 | 31 | + | + | |
| 325MB<br>PN 2016649<br>LPS 340 AT | NEC Powermate® 486DX33<br>PN 2016597 | 1011 | 15 | 0 | 1011 | 44 | 48 | + | + | |
| 850MB<br>PN 2016715<br>850/AT | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | 0 | 1023 | 63 | 28 | + | + | |
| 1.080GB<br>PN 2016801 | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | 0 | 1023 | 63 | 28 | + | + | |
| 3.2GB<br>PN 2016828 | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | System select | 1023 | 63 | 28 | + | + | |
| 8.4GB<br>PN 2016854 | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | System select | 1023 | 63 | 28 | + | + | |
| **Intel® 486DX33 Classic R Plus PN 2016687** | | | | | | | | | | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1011 | 15 | 0 | 1011 | 44 | 2 | + | + | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 1.080GB<br>PN 2016801 | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |

**Table A.1-1 MAXM™ Analyzer DMS Computer.Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **8D w/Retic** | **8DJ** | |
| 3.2GB<br>PN 2016828 | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 8.4GB<br>PN 2016854 | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| **RADI Sys 100MHz Pentium PN 2016799** | | | | | | | | | | |
| 1.080GB<br>PN 2016801 | RADI Sys 100MHz Pentium<br>PN 2016799 | 2097 | 16 | 0 | 2096 | 63 | auto | + | + | |
| 3.2GB<br>PN 2016828 | RADI Sys 100MHz Pentium<br>PN 2016799 | 6256 | 16 | auto | auto | 63 | auto | + | + | |
| 8.4GB<br>PN 2016854 | RADI Sys 100MHz Pentium<br>PN 2016799 | 16320 | 16 | 0 | 0 | 63 | auto | + | + | |

**ATTENTION:**

- (Blank Space)...Not tested by Engineering
- (+)...Approved by Engineering
- The 850MB, 1.080GB, 3.2GB and 8.4GB drives are system configured to 504MB only, with the exception of the RADI Sys 100MHz Pentium computer.
- All MAXM™ Analyzer Systems, Revision 8D or higher are configured with IBM® PC DOS 5.02 with one C:\ partition.

## A.2 STKS™ Analyzer DMS Computer…Drive Configuration

**Table A.2-1 STKS™ Analyzer DMS Computer…Drive Configuration**

| Drive PN | Base PN | Drive Setup Information for Intel® 301Z configured for an IDE controller. | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **1L 1L/1J** | **3C** | **3D** |
| 40MB<br>PN 2016466<br>LPS 40AT | Intel® 301Z<br>PN 2016350 | 819 | 6 | 0 | 0 | 17 | 44 | + | | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 301Z<br>PN 2016350 | 723 | 13 | 0 | 723 | 51 | 48 | | + | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 301Z<br>PN 2016350 | 1011 | 15 | 0 | 1011 | 44 | 48 | + | | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 301Z<br>PN 2016350 | 1024 | 16 | 0 | 1023 | 63 | 48 | | + | |
| 1.080GB<br>PN 2016801 | Intel® 301Z<br>PN 2016350 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | + |
| 3.2GB<br>PN 2016828 | Intel® 301Z<br>PN 2016350 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | + |
| 8.4GB<br>PN 2016854 | Intel® 301Z<br>PN 2016350 | 1024 | 16 | 0 | 1023 | 63 | 48 | + | + | + |
| | | | | | | | | | | |
| | | | | | | | | | | |
| **Intel® 300 SX16 PN 2016451** | | | | | | | | | | |
| | | | | | | | | | | |
| 40MB<br>PN 2016466<br>LPS 40AT | Intel® 300 SX16<br>PN 2016451 | 965 | 5 | -1 | 1 | 17 | 33 | + | | |
| 49MB<br>PN 2016646<br>52AT | Intel® 300 SX16<br>PN 2016451 | 751 | 8 | -1 | 1 | 17 | 48 | + | | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 300 SX16<br>PN 2016451 | 723 | 13 | 0 | 0 | 51 | 49 | | + | |

**Table A.2-1 STKS™ Analyzer DMS Computer…Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information for Intel® 301Z configured for an IDE controller. | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **1L 1L/1J** | **3C** | **3D** |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 300 SX16<br>PN 2016451 | 1011 | 15 | 0 | 1011 | 44 | 48 | | | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 300 SX16<br>PN 2016451 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 1.080GB<br>PN 2016801 | Intel® 300 SX16<br>PN 2016451 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 3.2GB<br>PN 2016828 | Intel® 300 PN 2016451SX16 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 8.4GB<br>PN 2016854 | Intel® 300 SX16<br>PN 2016451 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| **Intel® 300 SX20 PN 2016475** | | | | | | | | | | |
| | | | | | | | | | | |
| 40MB<br>PN 2016466<br>LPS 40AT | Intel® 300 SX20<br>PN 2016475 | 965 | 5 | -1 | 1 | 17 | 33 | + | + | |
| 49MB<br>PN 2016646<br>52AT | Intel® 300 SX20<br>PN 2016475 | 751 | 8 | -1 | 1 | 14 | 25 | + | | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 300 SX20<br>PN 2016475 | 723 | 13 | 0 | 0 | 51 | 49 | | + | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 300 SX20<br>PN 2016475 | 1011 | 15 | 0 | 1011 | 44 | 48 | | + | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | | + | |
| 1.080GB<br>PN 2016801 | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| 3.2GB<br>PN 2016828 | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |

**Table A.2-1 STKS™ Analyzer DMS Computer...Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information for Intel® 301Z configured for an IDE controller. | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **1L 1L/1J** | **3C** | **3D** |
| 8.4GB<br>PN 2016854 | Intel® 300 SX20<br>PN 2016475 | 1024 | 16 | 0 | 1023 | 63 | 48 | | | |
| **Intel® 486DX33 Classic R PN 2016851** | | | | | | | | | | |
| | | | | | | | | | | |
| 234MB<br>PN 2016586<br>LPS 245AT | Intel® 486DX33 Classic R<br>PN 2016581 | 723 | 13 | 0 | 0 | 51 | 19 | + | + | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 486DX33 Classic R<br>PN 2016581 | 1011 | 15 | 0 | 1011 | 44 | 2 | + | + | |
| 850MB<br>PN 2016715<br>850/AT | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 1.080GB<br>PN 2016801 | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 3.2GB<br>PN 2016828 | Intel® 486DX33 Classic R<br>PN 2016851 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| 8.4GB<br>PN 2016854 | Intel® 486DX33 Classic R<br>PN 2016581 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| **NEC Powermate® 486DX33** | | | | | | | | | | |
| | | | | | | | | | | |
| 234MB<br>PN 2016586<br>LPS 245AT | NEC Powermate® 486DX33<br>PN 2016597 | 723 | 13 | 0 | 0 | 51 | 31 | + | + | |
| 325MB<br>PN 2016649<br>LPS 340 AT | NEC Powermate® 486DX33<br>PN 2016597 | 1011 | 15 | 0 | 1011 | 44 | 48 | + | + | |

**Table A.2-1 STKS™ Analyzer DMS Computer…Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information for Intel® 301Z configured for an IDE controller. | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **1L 1L/1J** | **3C** | **3D** |
| 850MB<br>PN 2016715<br>850/AT | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | 0 | 1023 | 63 | 28 | + | + | |
| 1.080GB<br>PN 2016801 | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | 0 | 1023 | 63 | 28 | + | + | |
| 3.2GB<br>PN 2016828 | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | System select | 1023 | 63 | 28 | + | + | |
| 8.4GB<br>PN 2016854 | NEC Powermate® 486DX33<br>PN 2016597 | 1024 | 16 | System select | 1023 | 63 | 28 | + | + | |
| **Intel® 486DX33 Classic R Plus PN 2016687** | | | | | | | | | | |
| | | | | | | | | | | |
| 325MB<br>PN 2016649<br>LPS 340AT | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1011 | 15 | 0 | 1011 | 44 | 2 | + | + | + |
| 850MB<br>PN 2016715<br>850/AT | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | + |
| 1.080GB<br>PN 2016801 | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | + |
| 3.2GB<br>PN 2016828 | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | + |
| 8.4GB<br>PN 2016854 | Intel® 486DX33 Classic R Plus<br>PN 2016687 | 1024 | 16 | 0 | 1023 | 63 | 3 | + | + | + |
| | | | | | | | | | | |
| **RADI Sys 100MHz Pentium PN 2016799** | | | | | | | | | | |
| 1.080GB<br>PN 2016801 | RADI Sys 100MHz Pentium<br>PN 2016799 | 2097 | 16 | 0 | 2096 | 63 | auto | | + | + |

**Table A.2-1 STKS™ Analyzer DMS Computer...Drive Configuration *(Continued)***

| Drive PN | Base PN | Drive Setup Information for Intel® 301Z configured for an IDE controller. | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **1L 1L/1J** | **3C** | **3D** |
| 1.080GB PN 2016801 | RADI Sys 100MHz Pentium PN 2016799 | 1024 | 16 | 0 | 2096 | 63 | user defined 504MB | + | | |
| 3.2GB PN 2016828 | RADI Sys 100MHz Pentium PN 2016799 | 6256 | 16 | auto | auto | 63 | auto | | + | + |
| 3.2GB PN 2016828 | RADI Sys 100MHz Pentium PN 2016799 | 1024 | 16 | 0 | 2096 | 63 | user defined 504MB | + | | |
| 8.4GB PN 2016854 | RADI Sys 100MHz Pentium PN 2016799 | 16320 | 16 | 0 | 0 | 63 | auto | | + | + |
| 8.4GB PN 2016854 | RADI Sys 100MHz Pentium PN 2016799 | 1024 | 16 | 0 | 0 | 63 | user defined 504MB | + | | |

**ATTENTION:**

- (Blank Space)...Not tested by Engineering
- (**+**)...Approved by Engineering
- The 850MB, 1.080GB, 3.2GB and 8.4GB drives are system configured to 504MB only, with the exception of the RADI Sys 100MHz Pentium computer.
- All STKS™ Analyzer Systems, Revision 1L 1L/1J or lower are configured with IBM® PC DOS 3.30 with two C: & D: partitions
- All STKS™ Analyzer Systems, Revision 2B or higher are configured with IBM® PC DOS 5.02 with one C:\ partition.

## A.3 HmX Analyzer DMS Computer Drive Information

**Table A.3-1 HmX Analyzer DMS Computer…Drive Information**

| Drive PN | Base PN | Drive Setup Information | | | | | | Supports Software Revision | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Computer & Drive** | **CYL** | **HD** | **PRE** | **LZ** | **SEC** | **TYPE** | **1B and higher** | | |
| 3.2GB<br>PN 2016828 | RADI Sys 100MHz Pentium Tower<br>PN 2016828 | 6256 | 16 | auto | auto | 63 | auto | + | | |
| 8.4GB<br>PN 2016854 | RADI Sys 100MHz Pentium Tower<br>PN 2016828 | 16320 | 16 | 0 | 0 | 63 | auto | + | | |

**ATTENTION:**

- (Blank Space)...Not tested by Engineering
- (+)...Approved by Engineering
- All HmX Analyzer Systems are configured with IBM® PC DOS 5.02 with one C:\ partition.

## A.4 Approved BIOS and Motherboard Revisions for STKS™ Analyzer, MAXM™ Analyzer and HmX Analyzer…DMS Computers

**Table A.4-1 Approved BIOS and Motherboard Revisions for STKS™ Analyzer, MAXM™ Analyzer and HmX Analyzer DMS Computers**

| Computer Model | Approved Motherboard Version | Approved BIOS Version |
|---|---|---|
| **Intel® 301Z** | Not Controlled | 1.10 16.BO<br>1.10 04.BO<br>1.10 21.B)<br>Keyboard Controller Rev. 2.48 |
| **Intel® 300SX16** | PBA-511XXXXXX<br>PBA-502XXXXXX<br>PBA-503XXXXXX | U81=507718-001 V1.10.18.D1<br>U82=507719-001 V1.10.18.D1<br><br>U81=510514-001 V1.10.20.D1<br>U82=510514-001 V1.10.18.D1 |
| **Intel® 300SX20** | PBA-511XXXX004<br>PBA-511XXXX006 | 1.10.32.LO<br>1.10.33.LO |
| **Intel®<br>Classic R** | PBA-612478-001<br>PBA-612478-002<br>AA-612478-003<br>AA-612478-004<br>AA-612478-008<br>*AA-612478-009<br>*AA-627111-001<br>AA-612478-102<br>AA-612478-103<br>AA-612478-XXX | 1.00.02.ACO FLASH BIOS |
| **Intel®<br>Classic R Plus** | PBA-615293-103<br>AA-615535-103 | 1.00.02.ACO FLASH BIOS |
| **NEC Powermate®** | 158-026128-101B<br>Revisions A5X or B6X | 1.00.06 FLASH BIOS |
| **RadISys 100 MHz Pentium<br>&<br>RadiSys 100 MHz Pentium<br>Tower** | PBA-61-0548-13 | 1.00.07.DBO.AMI FLASH BIOS |

* These two Motherboards are the same, but could arrive in production from the vendor under two different (AA) numbers.

## B.1 DIGIBOARD Diagnostics Kit Field Test Procedure

Refer to the parts section for the Part Number of the Digiboard Diagnostics Kit.

### Purpose

This procedure is used to field test the Digiboard in the STKS™ Analyzer, MAXM™ Analyzer and HmX Analyzer DMS computers.

### Tools/Supplies Needed

Working DMS System

Digiboard Diagnostics RS232 Kit

### Digiboard Testing

1. Power down the DMS computer.
2. Disconnect the digicable from the digiboard at the rear of the DMS computer.
3. Load a bootable disk into the floppy drive and power on the DMS computer.
4. Once the system has completed booting up, remove the boot disk and place the Digiboard Diagnostics Disk into the floppy drive.
5. Type the following command: **a:\comxidia** and press Enter.
6. Check that the current Diagnostics Configuration appears on screen after step 5 is completed, If not, configure as shown below:

| | |
|---|---|
| Board type: | com/xi RS-232 |
| Channels: | 4 |
| Window: | D8000 |
| I/O Port Number: | 320 |
| IRQ Number: | 5 |
| Mode: | Auto Mode |
| ERR Action: | Quit |

7. Install the Loop back connector included with the test kit into the rear of the DMS under test.
8. Type [**R**] to run the digiboard diagnostics.
9. When "*Enter Board's Serial Number*" appears on the screen, press Enter. Complete digiboard testing will begin.

10. Verify that no failure occurs for any of the following checks, (all checks should indicated PASSED as follows):

| | |
|---|---|
| I/O PORT TEST | PASSED |
| HOST DUAL PORTED MEMORY TEST 1 | PASSED |
| HOST DUAL PORTED MEMORY TEST 2 | PASSED |
| HOST DUAL PORTED MEMORY TEST 3 | PASSED |
| HOST DUAL PORTED MEMORY TEST 4 | PASSED |
| HOST DUAL PORTED MEMORY TEST 5 | PASSED |
| HOST DUAL PORTED MEMORY TEST 6 | PASSED |
| FEP DUAL PORTED MEMORY TEST 1 | PASSED |
| FEP DUAL PORTED MEMORY TEST 2 | PASSED |
| FEP DUAL PORTED MEMORY TEST 3 | PASSED |
| FEP DUAL PORTED MEMORY TEST 4 | PASSED |
| FEP DUAL PORTED MEMORY TEST 5 | PASSED |
| FEP DUAL PORTED MEMORY TEST 6 | PASSED |
| HOST/FEP ARBITRATION TEST | |

| | |
|---|---|
| BOARD TYPE: | :COM/Xi RS-232 |
| BOARD ADDRESS | :D8000 I/O PORT: 320 IRQ 5 |

| | |
|---|---|
| PORT SEARCH | PASSED |
| PROCESSOR/PORT ADDRESSING TEST | PASSED |
| PROCESSOR/PORT DATA PATH TEST | PASSED |
| LOOP BACK TEST | PASSED |
| IRQ TEST | PASSED |
| CPU SPEED TEST | PASSED |
| BAUD SPEED TEST | PASSED |

BOARD ADDRESS: D8000: I/O PORT 320: IRQ 5:

188 speed 100%

| | | | --188 PORT-- | | -------CNTRL------- | | | | ---------INTS-------- | | ----------BAUD ---------- | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CHNL** | **FOUND** | | **ADDR** | **DATA** | **CT** | **RI** | **DS** | **CD** | **HOST** | **188** | **SPEED** | **TX** | **%** |
| 1 | (3) | P | P | P | P | P | P | P | P | P | 57600 | P | 100 |
| 3 | (1) | P | P | P | P | P | P | P | P | P | 2400 | P | 100 |
| 2 | (4) | P | P | P | P | P | P | P | P | P | 57600 | P | 100 |
| 4 | (2) | P | P | P | P | P | P | P | P | P | 57600 | P | 100 |

PASS: 5

11. Press **<Esc>** following the 5th pass to stop the test.
12. To the prompt "Show error log? (Y/*)", press Y. The following display will appear.

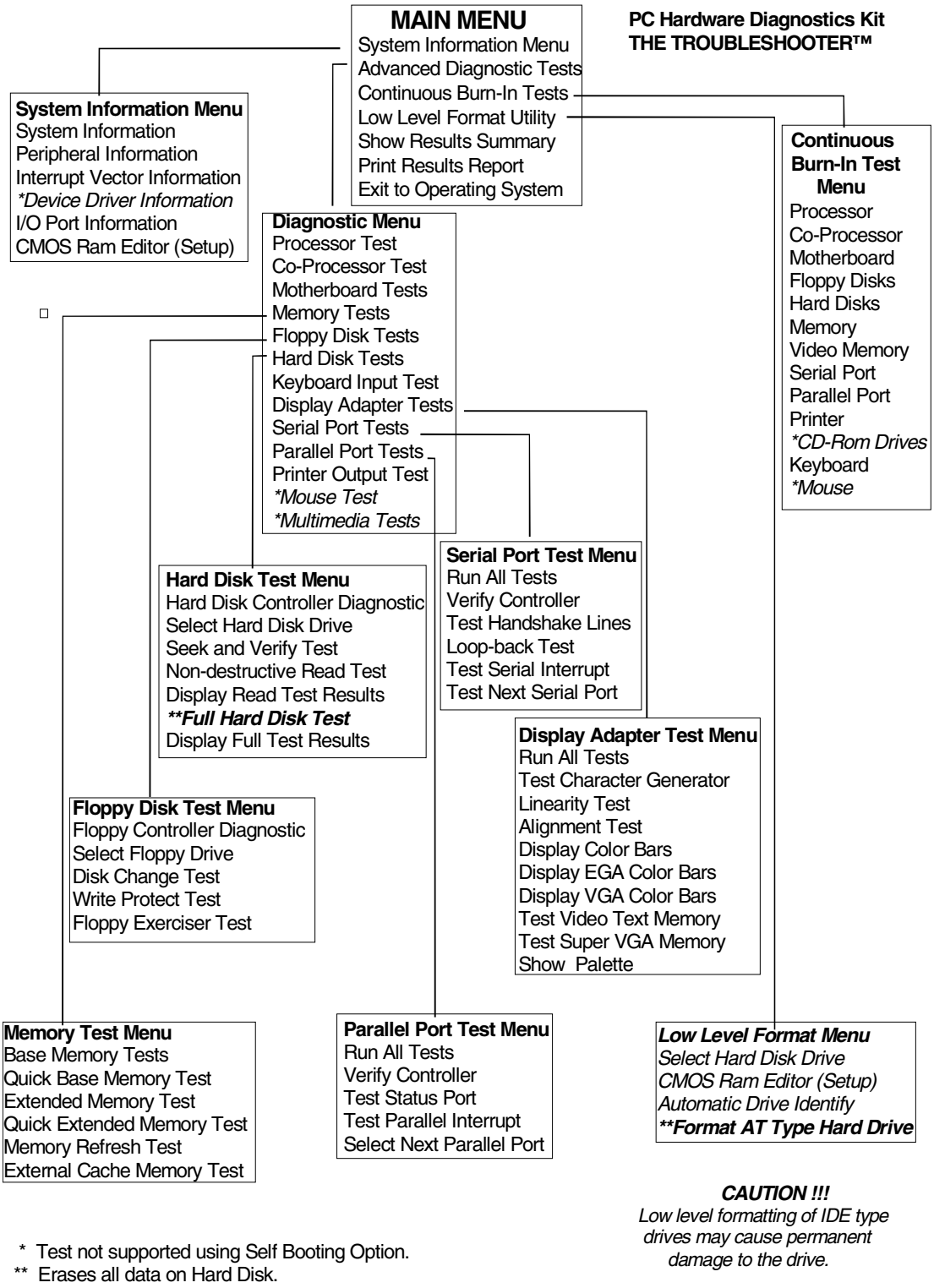
| **CHL** | ----------CNTRL-------- | | | | **INTS** | ----------BAUDS---------- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **#** | **CTS** | **DSR** | **RI** | **DCD** | **HST** | **186** | **300** | **600** | **1.2** | **2.4** | **4.8** | **9.6** | **192** | **384** | **576** |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

PASSES: 5 Press any key to continue S/N

13. Verify all columns are "**0**" as shown above indicating no errors were encountered.
14. Press any key to exit error log.
15. Press Q to Quit.
16. Remove the test diskette from the DMS.
17. Power down the DMS.
18. Remove the loop back connector and reconnect the digicable.
19. Power up and reboot the DMS.

## B.2 THE TROUBLESHOOTER™/PC Hardware Diagnostics Kit Menu Options

**Figure B.2-1 THE TROUBLESHOOTER™/PC Hardware Diagnostics Kit Menu Options**



## B.3 OPTune™ Hard Disk Optimizer

### Procedure

1. Loading the OPTune™ Software
   a. Insert a bootable diskette into drive A and press Ctrl+Alt+Delete to re-boot the DMS.
   b. Press Enter Enter when prompted, to bypass entering date and time.
   c. Remove the bootable diskette and insert the OPTune™ diskette into drive A.
   d. Run the OPTune™ software.
      - If the DMS is an Intel® 301Z computer base, type **A:\optune** and press Enter.
      - If the DMS computer base has an IDE hard drive, type **A:\optune I** and press Enter to turn off disk caching.
2. Check-Disk

   The Check-Disk utility checks for file corruption and repairs any DOS structure errors detected.
   a. From the OPTune™ Main Menu, select **Check-Disk ▸▸ Fix & Report**
   b. When the prompt *"Which drive do you want to select [A]* appears. Type C and press Enter.
   c. After the system has completed its test, if "*no DOS structure errors detected Press any key to continue"*...is displayed:
      1) Press any key.
      2) Proceed to **Verify/Fix-Disk**.
   d. If the system reports errors, it indicates a file may have been corrupted and has been deleted. Since this could cause DMS problems, it is recommended that you:
      1) Perform high-level formatting. Refer to Heading 5.3.
      2) Rerun OPTune™ software.
      3) Reload DOS and DMS software. Refer to Section 6 Heading Loading DOS Operating System
   e. If you choose not to reformat the hard drive:
      1) Insert the bootable diskette into diskette drive A.
      2) Type **DEL C:\FILE*.CHK** and press Enter to delete the files that Check-Disk created.
      3) When the prompt "*Are you sure Y/N?"* appears, type Y and press Enter.
      4) Reload the OPTune™ software.

   **ATTENTION:** Failure to perform this step could cause software problems.
3. Verify/Fix-Disk

   The Verify/Fix-Disk utility checks the disk surface for any bad spots that could cause file corruption and maps them so they are not used. The OPTune™ utility tries to recover data written to a bad spot and move it to a good area.

a. From the OPTune™ Main Menu select **Verify/Fix-Disk ▸▸ Options**.

b. Press Spacebar to switch from "**Verification mode**": to "**Bit Test 1**" and press Enter to accept the change.

c. Select **Start Verify/Fix-Disk**.

d. When the prompt "*which drive do you want to select? [A]"* appears, type C and press Enter.

e. After the system has completed its test and corrected any errors, perform the following:

1) If a D drive is present on the system, repeat steps 3a through 3d selecting drive D when prompted for a drive letter.

2) Proceed to **Optimize**.

f. If the system reports that it was unable to correct an error, it indicates a file is irretrievably corrupted. Since this could cause DMS problems, it is recommended that you:

1) Perform high-level formatting. Refer to Heading 5.3.

2) Rerun OPTune™ software.

3) Reload DOS and DMS software. Refer to Section 6 Heading Loading DOS Operating System

4. Optimize

The Optimize utility defragments files and reorganizes the DOS structure. This speeds up disk access and reduces wear and tear on the drive mechanism.

a. From the OPTune™ Main Menu, select **Optimize ▸▸ File Realignment**.

b. When the prompt "*which drive do you want to select? [A]*" appears, type C and press Enter.

c. Once the system has completed the test:

1) If a D drive is present on the system, repeat steps 4a and 4b selecting D when prompted for a drive letter.

2) Proceed to **Tune-Disk**.

5. Tune-Disk

The Tune-Disk utility verifies you hard disk is formatted with the correct interleave and optionally re-interleaves the drive if necessary. Changing a drive to the proper interleave can boost performance up to 10 times without any loss of data.

**ATTENTION:** Do not run the Tune-Disk utility on an IDE drive as it is not necessary.

a. Testing the Current Interleave

1) From the OPTune™ Main Menu, select **Tune-Disk ▸▸ Test Interleave**.

2) When the prompt *"Which drive do you want to select? [A]"* appears, type C and press Enter

3) On the screen, compare the display of the current interleave to the display of the optimal interleave. If these numbers do not match, re-interleave the hard drive to increase performance.

b. Re-Interleaving a Hard Drive

1) From the OPTune™ Main Menu, select **Tune-Disk ▸▸ Start Tune-Disk**.
2) When the prompt *"Which drive do you want to select? [A]"* appears, type C and press Enter.
3) Tune-Disk displays the current and the optimal interleaves. Use the ↑ and ↓ to scroll to the desired interleave and press Enter to start the process.
4) If a D drive is present on the system, repeat steps 5b-1 through 5b-2, typing D when prompted for a drive letter.

6. System Verification
   a. Remove the OPTune™ diskette from drive A.
   b. Turn the DMS off, wait 15 seconds and turn the power back on to re-boot the computer.

## Japanese DMS Configurations

### Purpose

Perform this procedure when upgrading the DMS to the Japanese configuration. The upgrade consists of installing a Japanese AX Video card into the HmX Analyzer DMS computer and MAXM™ Analyzer DMS computer.

Setup and configuration procedures appear in this section for the following Japanese DMS computers.

- Heading C.1, RadiSys Pentium Table Top and Tower DMS Computers
- Heading C.2, Intel® Classic R and Classic R Plus DMS computers
- Heading C.3, NEC Powermate® DMS Computer
- Heading C.4, Intel® 300SX-16 Computer
- Heading C.5, Intel® 300SX-20 Computer

### Tools/Supplies Needed

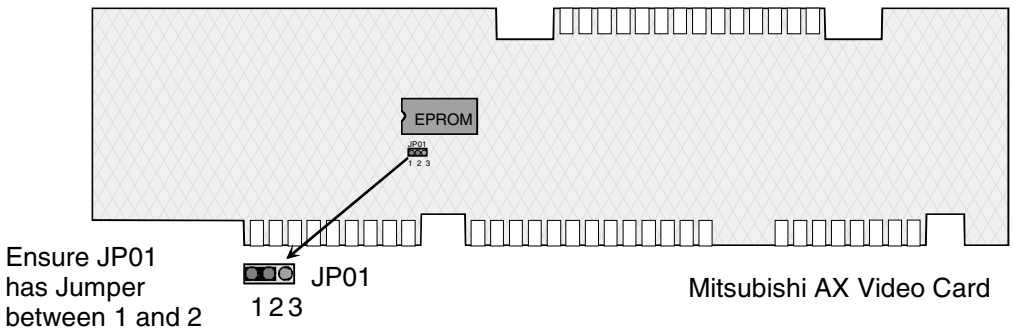
- ❑ Mitsubishi® AX Video Card (no longer available)
- ❑ Use AXR Video Card PN 2016903

## AX Circuit Card Configuration Procedures

## C.1 RadiSys Pentium Table Top and Tower DMS Computers

1. Installation and Configuration of the Japanese AX Video Card
   a. Locate the Japanese AX Video Card.
   b. (Mitsubishi ® AX Video Card only) Inspect JP01 to verify that positions 1 and 2 are Jumped, see Figure C.1-1.

**Figure C.1-1**




   c. Turn off the DMS computer and unplug the power cord.
   d. Remove the DMS computer cover.
   e. Remove the monitor cable from the video card and remove the video card from expansion slot PCI J4E1

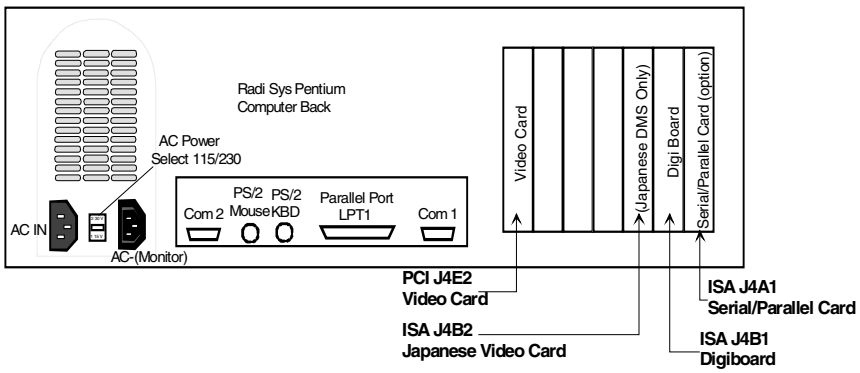
f. Install the Japanese AX Video Card in expansion slot ISA J4B2 and connect the monitor cable to the CRT port on the card.

g. Verify that the circuit boards are in the correct expansion slots. Go by the silk-screen on the motherboard. The label on the computer base may be missing or mis-placed. Refer to Figure C.1-2, Figure C.1-3, and Table C.1-1 for correct expansion slot configurations.

**Table C.1-1 RadiSys Motherboard Expansion Slot Assignments for Japanese DMS**

| Motherboard Expansion Slot Silk Screen | Circuit Board Description |
|---|---|
| ISA J4A1 | Serial/Parallel (option) |
| ISA J4B1 | Digiboard |
| ISA J4B2 | Japanese Video Card (Japanese DMS option) |
| PCI J4C1: Slot-4 | Not cut out on base, not labeled, Not Used |
| PCI J4D1: Slot-3 | Not Used |
| PCI J4E1: Slot-2 | Not Used |
| PCI J4E2: Slot-1 | Video Card (standard) |

**Figure C.1-2 RadiSys Expansion Slot Assignment for Japanese DMS (MAXM™ Analyzer)**




h. Reconnect the power cord to the DMS computer base.

2. CMOS Setup and Verification

a. Turn on the DMS

b. To enter **CMOS Setup**, press F1 immediately after the boot and before the memory test.

c. Select the **Main Setup Menu** and confirm that the CMOS setup is as shown in Table C.1-2.

d. Note any changes to the configuration. When you finish, press F10 to save your changes and reboot the DMS.

e. Reinstall the DMS computer base cover.

3. Software Installation

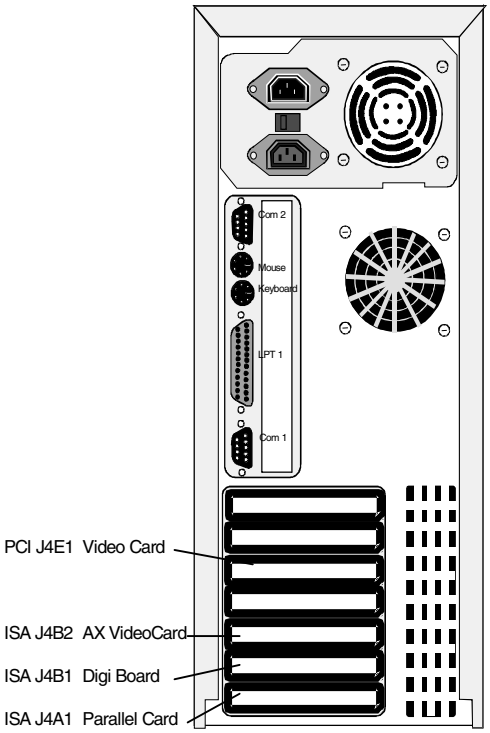
Refer to Software Installation for instructions on how to install the software. procedure section 6 Heading Loading DOS Operating System

**Table C.1-2 RadiSys Main Menu Setup Informatio**

| ***Main*** | ***Advanced*** | ***Security*** | ***Exit*** |
|---|---|---|---|
| | *System Date* | *xxx ddd yyyy* | |
| | *System Time* | *hh:mm:ss* | |
| | *Floppy Options* | *Press Enter* | |
| | *Primary IDE Master* | *Quantum Pioneer SG* | |
| | *Primary IDE Slave* | *Not Installed* | |
| | *Secondary IDE Master* | *Not Installed* | |
| | *Secondary IDE Slave* | *Not Installed* | |
| | *Language* | *English, (U.S)* | |
| | *Boot Options* | *Press Enter* | |
| *>>>>>* | *Video Mode* | *EGA/VGA** | |
| | *Mouse* | *Not Installed* | |
| | *Base Memory* | *640 KB* | |
| | *Extended Memory* | *15360 KB* | |
| | *BIOS Version* | *1.00.07.DBO* | |

>>>>> denotes a possible change for the Japanese configuration.
* May change with Japanese AX Video card installed, system is plug & play which will automatically update any settings.

**Figure C.1-3 RadiSys Tower Expansion Slot Assignment - Japanese DMS (HmX Analyzer)**



## C.2 Intel® Classic R and Classic R Plus DMS computers

1. Installation and Configuration of the Japanese AX Video Card.
   a. Locate the Japanese AX Video Card.
   b. (Mitsubishi® AX Video Card Only) Inspect JP01 to verify that positions 1 and 2 are jumpered. See Figure C.1-1.
   c. Turn off the DMS computer and unplug the power cord.
   d. Remove the DMS computer cover.
   e. Remove all cards from the expansion slots and place the cards in a safe place for reinstallation later.
   f. Locate J16 on the motherboard and configure so that pins 2 and 3 are jumped: Refer to Figure C.2-1.

**Figure C.2-1 Intel® Classic R & Classic R Plus Motherboard Jumper J16 Configuration**

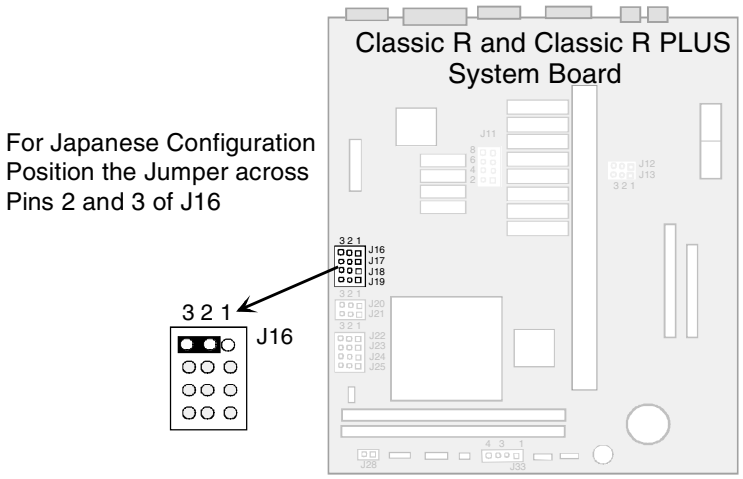
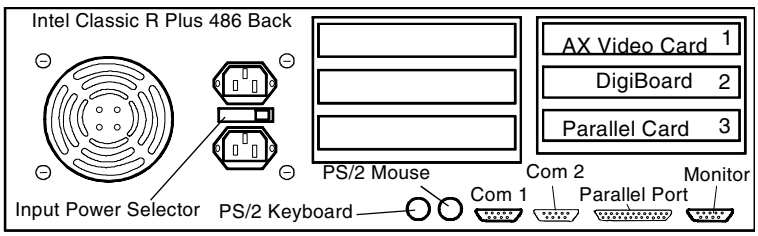
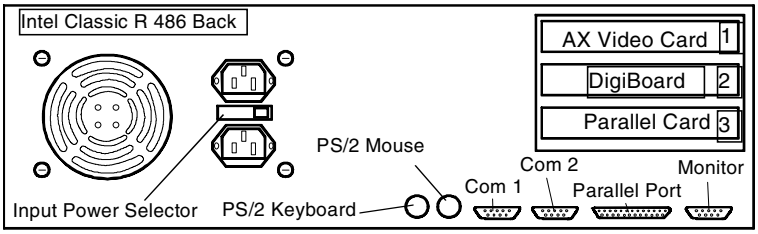



**Figure C.2-2 Intel® CLassic R & Classic R Plus Expansion Slot Assignment - Japanese DMS**



g. Install the following circuit cards into the expansion slots of the Intel® Classic R and Classic R Plus. Refer to Figure C.2-2.

**Table C.2-1 Intel Classic R & Classic R Plus Expansion Board Assignments**

| | |
|---|---|
| Slot 1 | Japanese AX Video card |
| Slot 2 | Digiboard |
| Slot 3 | Serial/Parallel card (option) |

h. Remove the monitor cable from the video port of the motherboard. Install the monitor cable to the CRT port on the Japanese AX Video Card.

i. Re-connect the power cord to the DMS computer base.

2. CMOS Setup and Verification

a. Turn ON the DMS computer. After a few seconds, this initial screen appears.

*Phoenix BIOS (TM) A486 Version 1.00.02.ACO*
*Copyright© 1985-1992 Phoenix Technologies Ltd.*
*All Rights Reserved*
*640 K Base Memory*
*7168 K Extended Memory XXX*

b. Access the CMOS Setup Screen by pressing **<F1>** as soon as **XXX** counts down to 135.

c. Press Page Down when page 1 of the Phoenix SETUP Utility appears. This advances you to page 2 of 3. The configuration on the screen must be identical to the following >>>>>>>> indicates a change

:

*Phoenix SETUP Utility (Ver 1.00) Copyright*
*1985-1992 Phoenix Technologies Ltd.* *Page 2 of 3*

| | | |
|---|---|---|
| | *Base Memory* | *640 KB* |
| | *Extended Memory* | *7168 KB* |
| | *Base Memory above 512 K* | *Enabled* |
| | *Parallel Port* | *Address 378H:Compatible/IRQ7* |
| | *Parallel Port Interrupt* | *Enabled* |
| | *Serial Port 1:* | *Enabled* |
| | *Serial Port 2:* | *Enabled* |
| >>>>>>>>>>>>>> | *Video Type* | *Not Installed* |
| | *Video Horizontal Refresh* | *31.5-64.0 KHz* |
| | *640 X 480 (VGA) Vertical Refresh* | *60 or 72 Hz* |
| | *800 X 600 Vertical Refresh* | *72 Hz* |
| | *1024 X 768 Vertical Refresh* | *72 Hz Non-Interlaced* |
| | *1280 X 1024 Vertical Refresh* | *43.5 Hz Interlaced* |
| | *VGA Mode Refresh Rate* | *60 Hz* |
| | *Onboard Video BIOS Mapping:* | *to E0000H* |

| | | | |
|---|---|---|---|
| *ESC* | *Up/DN arrows* | *+/-* | *Pg Up/Dn* |
| *Menu* | *Field* | *Value* | *Page* |

*Use the <Up Arrow> or <Down Arrow> to scroll and the + or - keys to change the Video Type Setting*

d. Make the necessary adjustments to get the configuration to match that above. When you finish making changes, press Esc then F4. This saves your changes and reboots the DMS computer.

e. Reinstall the DMS computer cover.

3. Software Installation

   a. Refer to Software Installation for instructions on how to install the software. procedure section 6 Heading Loading DOS Operating System

## C.3 NEC Powermate® DMS Computer

1. Installation and Configuration of the Japanese AX Video Card.
   a. Locate the Japanese AX Video Card.
   b. (Mitsubishi® Only) Inspect JP01 to verify that positions 1 and 2 are jumpered. See Figure C.1-1.
   c. Turn off the DMS computer and unplug the power cord.
   d. Remove the DMS computer cover.
   e. Remove all cards from the expansion slots and place the cards in a safe place for reinstallation later.
   f. Locate SW1 on the motherboard and configure the switch to the ON position. Refer to Figure C.3-1.

**Figure C.3-1 NEC Powermate® DMS Computer SW1 Setting For Japanese DMS**

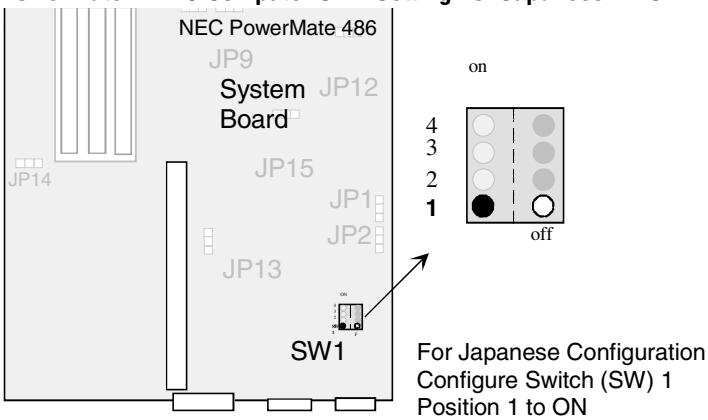


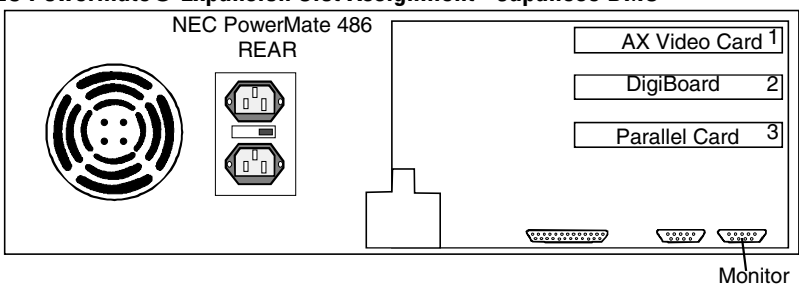

Figure C.3-1

   g. Install the following circuit cards in the expansion slots of the NEC Powermate® DMS computer as follows. Refer to Table C.3-1 and Figure C.3-2.

**Table C.3-1 NEC Powermate® Expansion Slot Assignment - Japanese DMS**

| | |
|---|---|
| Slot 1 | Japanese AX Video Card |
| Slot 2 | Digiboard |
| Slot 3 | Serial/Parallel card (option) |

**Figure C.3-2 NEC Powermate® Expansion Slot Assignment - Japanese DMS**



h. Remove the Monitor cable from the video port of the motherboard. Install the monitor cable to the CRT port on the Mitsubishi® AX Video Card.

i. Reconnect the power cord to the DMS computer.

2. CMOS Setup and Verification

a. Turn ON the DMS computer. After a few seconds, this initial screen appears:

*Phoenix BIOS (TM) A486 Version 1.01*
*Copyright© 1985-1990 Phoenix Technologies Ltd.*
*All Rights Reserved*

*NEC Corporation*
*PowerMate 425/PowerMate 433/PowerMate 466*
*BIOS ROM 1.00.06*

At this point, the flashing cursor( _ ) changes to a flashing box (■).

b. Press F1 immediately to access the **CMOS Setup**. The Auto Setup Summary screen appears

*Auto Setup Summary*

| *Exit* | *Comms* | *Drives* | *Keyboard* | *Performance* | *Time/Date* | *Video* | *About* |
|---|---|---|---|---|---|---|---|
| | | *System RAM:* | | *8 MB* | | | |
| | | *Base RAM:* | | *640 KB* | | | |
| | | *Current Extended RAM:* | | *7MB* | | | |
| | | *Previous Extended RAM:* | | *7.00 MB* | | | |
| | **>>>>>>* | *Video Controller* | | *VGA* | | | |
| | | *Math Coprocessor:* | | *Installed* | | | |
| | | *Diskette Drive A:* | | *1.44 MB-3.5 in.* | | | |
| | | *Diskette Drive B:* | | *Not Installed* | | | |
| | | *Hard Disk Drive 1:* | | *BIOS Defined Type 31* | | | |
| | | *Hard Disk Drive 2:* | | *Not Installed* | | | |

*To Open a window, press ALT+ the highlighted character key: i.e., ALT+X to Exit*
**>>>>>>>>> indicates a change.*

c. Verify that the information on the screen matches that in the previous auto setup summary above.

The Video Controller configuration is not set through CMOS, it is configured when SW1-1 on the motherboard is turned on.

d. Press Alt+X to exit the CMOS Setup.

e. Press ↓ and highlight **Exit and Save Changes**. Press Enter Enter to save your changes and to update the system CMOS.

f. Reinstall the DMS computer Cover.

3. Software Installation

   a. Refer to Software Installation for instructions on how to install the software. procedure section 6 Heading Loading DOS Operating System

## C.4 Intel® 300SX-16 Computer

1. Installation and Configuration of the Japanese AX Video Card.
   a. Locate the Japanese AX Video Card.
   b. (Mitsubishi® Only) Inspect JP01 to verify that positions 1 and 2 are jumpered. See Figure C.1-1.
   c. Turn off the DMS computer and unplug the power cord.
   d. Unscrew the three screws that attach the cover to the chassis and slide the cover forward to remove it
   e. Locate the jumpers on the motherboard and configure them as Jumper E2 to E3 and Jumper E8 to E9. Refer to Figure C.4-1.

**Figure C.4-1 Intel® 300SX-16 DMS Computer JumpeR Settings for Japanese DMS**

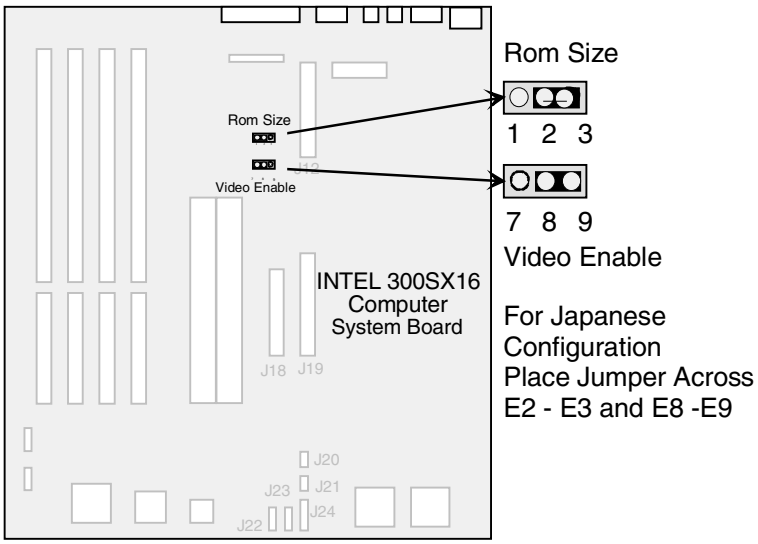


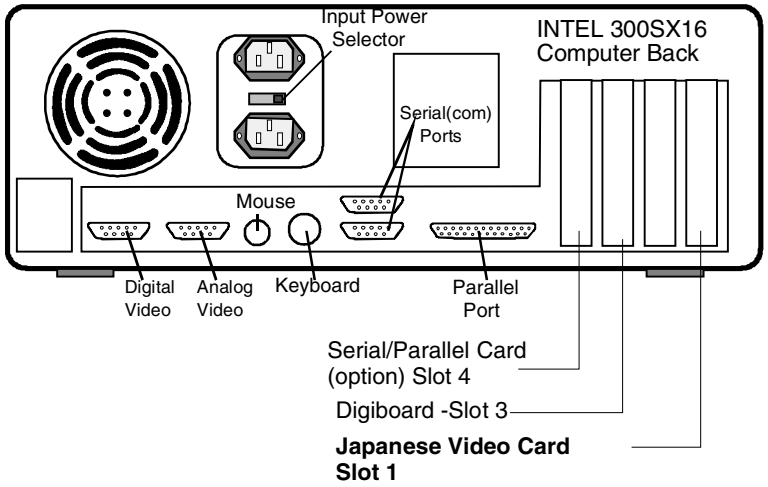

Figure C.4-1

   f. Remove the Modem card from expansion slot 1. Refer to Figure C.4-2.
   g. Install the circuit cards in the expansion slots shown in Table C.4-1 and Figure C.4-2.

**Table C.4-1 Intel® 300SX-16 DMS Computer Expansion Slot Assignment For Japanese DM**

| | |
|---|---|
| Slot 1 | Japanese AX Video Card |
| Slot 2 | Not Used |
| Slot 3 | Digiboard |
| Slot 4 | Serial/Parallel Card (option) |

**Figure C.4-2 Intel® 300SX-16 DMS Computer Expansion Slot Assignment For Japanese DMS**




h. Remove the Monitor cable from the video port of the motherboard and connect the cable to the CRT port on the Japanese AX Video Card.

i. Reconnect the power cord to the DMS computer.

j. Reinstall the DMS computer cover.

k. Turn on the DMS.

2. CMOS Setup and Verification

   It is not necessary to change the configuration of CMOS for the Intel 300SX-16 computer.

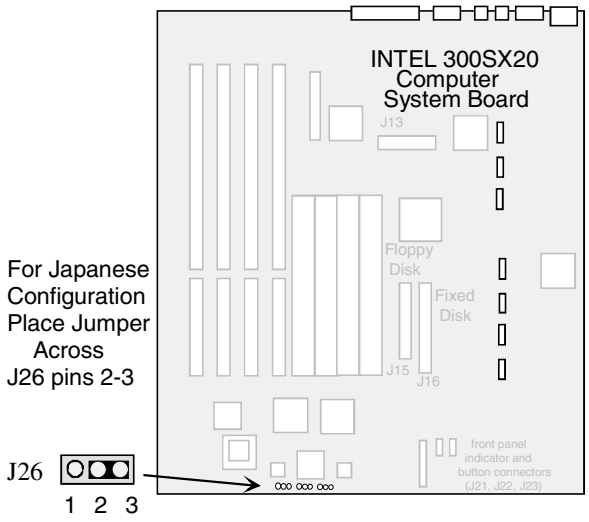
3. Software Installation

   a. Refer to Software Installation for instructions on how to install the software. procedure section 6

## C.5 Intel® 300SX-20 Computer

1. Installation and Configuration of the Japanese AX Video Card.
   a. Locate the Japanese AX Video Card.
   b. (Mitsubishi® AX Video Card Only) Inspect JP01 to verify that positions 1 and 2 are jumpered. See Figure C.1-1.
   c. Turn off the DMS computer and unplug the power cord.
   d. Unscrew the three screws that attach the cover to the chassis and slide the cover forward to remove it
   e. Locate J26 on the motherboard and configure so that pins 2 and 3 are jumped. Refer to Figure C.5-1.

**Figure C.5-1 Intel® 300SX-20 DMS Computer JumpeR Settings for Japanese DMS**




   f. Remove the Modem card from expansion slot 1. Refer to Figure Figure C.5-2, Intel® 300sx-20 Dms Computer expansion slot assignment for Japanese DMS
   g. Install the circuit cards in the expansion slots shown in Table C.5-1 and Figure C.5-2.

**Table C.5-1 Intel® 300SX-20 DMS Computer Expansion Slot Assignment for Japanese DMS**

| | |
|---|---|
| Slot 1 | Japanese AX Video Card |
| Slot 2 | Not Used |
| Slot 3 | Digiboard |
| Slot 4 | Serial/Parallel Card (option) |

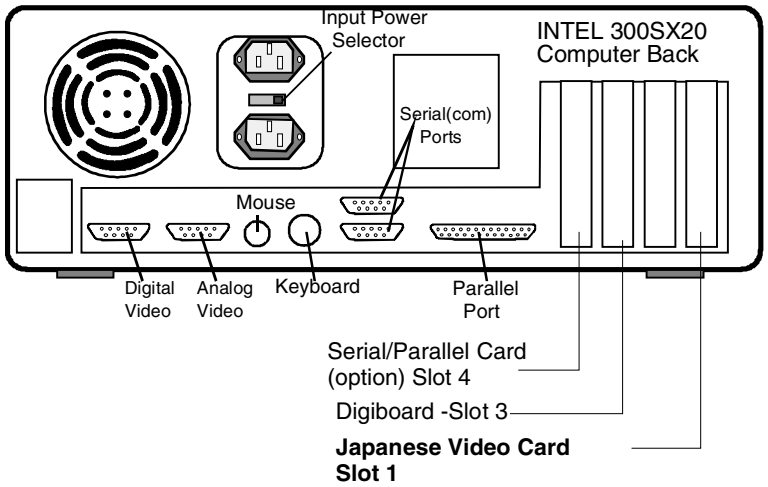
2. CMOS Setup and Verification

   It is not necessary to change the configuration of CMOS for the Intel 300SX-20.

3. Software Installation

a. Refer to Software Installation for instructions on how to install the software. procedure section 6 Heading Loading DOS Operating System

**Figure C.5-2 Intel® 300sx-20 Dms Computer expansion slot assignment for Japanese DMS**



# D.1 Raw Data Collection Procedure for MAXM™ Analyzer, Software Version 8D and Higher and HmX Analyzer, Software Version 1A and Higher

## Scope

The Raw Data Collection procedure explains how to collect Raw Data, sometimes called listmode data from the Coulter® HmX Analyzer, software version 1A and higher onto a 120 MB Super Disk.

or from the COULTER®MAXM™/MAXM AL Analyzer, software version 8D and higher onto a 120 MB Super Disk.

## Purpose

The intent of this document is to provide a means of collecting data so that it can be reviewed or “post-analyzed”. Data collected from samples that are run with “raw data” enabled becomes portable allowing for in-depth analysis at the Cellular Analysis Development Center. Raw data is required for evaluation of problems that may arise with existing algorithms. Additionally, a large raw database containing normal and abnormal samples is required for algorithm development.

## Tools/Supplies Needed

- ❑ External Super Disk Drive and parallel cable: (contact Miami Technical Support)
- ❑ Super Disk 120 MB removable floppy disk: (contact Miami Technical Support)
- ❑ Raw Data collection boot disk: (contact Miami Technical Support)
- ❑ (Service Disk 2 if MAXM™ Analyzer) or (Service Disk 3 if HmX Analyzer)

## Samples

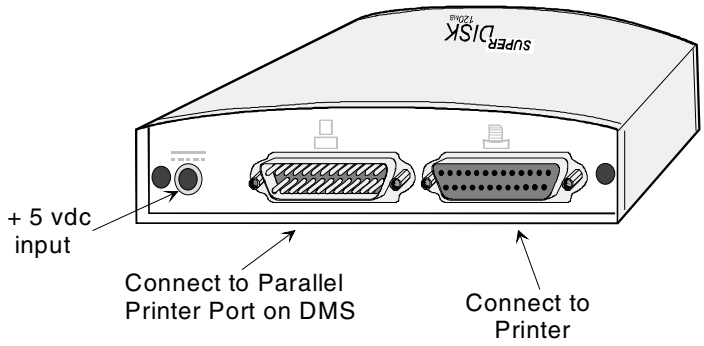
Any patient samples can be collected with raw data enabled.

## Procedure

1. Setup Instrument
   a. **HmX Analyzer ONLY** --- From the HmX Access Screen, press Esc to access DMS Main Menu.
   b. **MAXM™ Analyzer, start here** --- From the Main Menu, access **Special Functions ▸▸ Diagnostics ▸▸ Service Options**.
   c. Insert Service Disk 2 (MAXM) or Service Disk 3 (HmX)into DMS diskette drive A, Type "**service**" as the password at the prompt and press Enter.
   d. Highlight **Raw Data** and press Enter.
   e. At the first selection, "**Raw Data Capture**" type Y, then press F9 to escape and return to the Main Menu, it doesn't matter how the other selections are set.
2. Generate Data
   a. From the **Main Menu** press F5, "**Print**" then press the Spacebar to toggle to **All** and press Enter.
   b. In Sample Analysis, run the samples from which you wish to collect raw data as you would run any other samples. Maximum capacity is 260 samples. No special procedure is required.

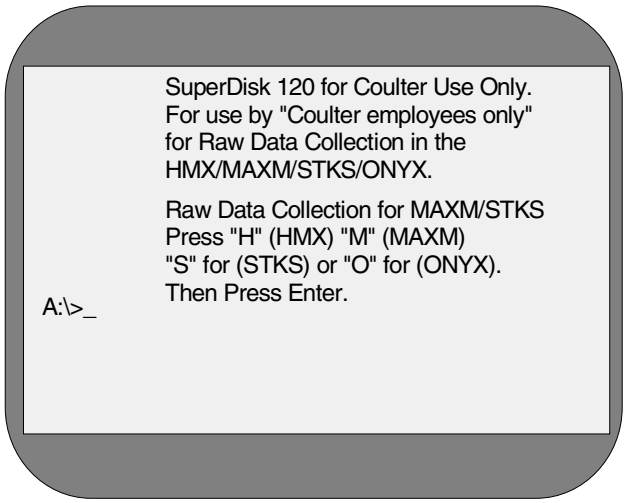
3. Confirm that raw data has been saved
   a. View the raw data collection results that print as samples are run.
4. Transferring raw data from the DMS hard drive to the Super Disk
   **a. Set up the 120 MB Super Drive**
      1) Disconnect the printer cable from the parallel port (male connector) of the DMS computer.
      2) Connect the male connector of the Super Disk Parallel Cable to the DMS parallel port and secure in place.
      3) Attach the printer cable that was just removed from the parallel port to the female connector on the Super Disk Drive and secure in place.
      4) Connect the female connector of the Super Disk parallel cable to the Super Disk male connector.
      5) Plug the round power cord connector from the 5VDC power adapter into the "5VDC" outlet on the back of the Super Disk Drive and plug the adapter into the AC socket (wall, Power Strip, or uninterrupted power supply).
      6) Insert a formatted LS 120 disk into the Super Disk Drive.

**Figure D.1-1 Connector End of Super Disk Drive**




   **b. Set Up the DMS and Transfer Data**
      1) Insert the Raw Data Collection "Boot Disk" into the DMS diskette drive A.
      2) Turn off/on the DMS and follow the instructions displayed on the screen.

**Figure D.1-2 Raw Data Collection Screen 1**

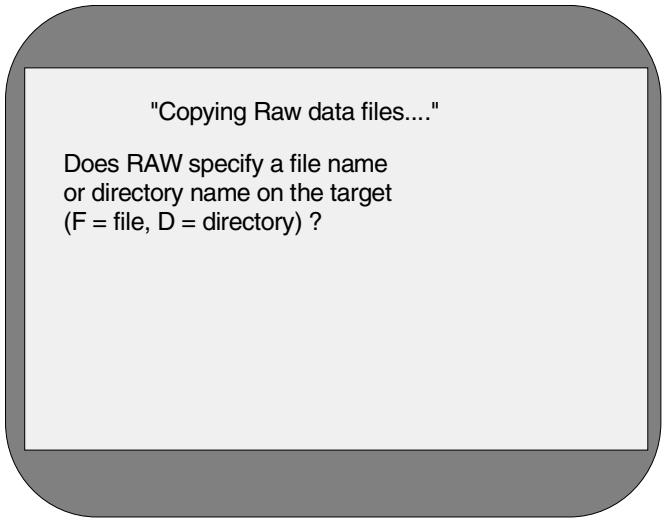



3) If the LS 120 disk in the Super Drive does not contain data, you will be prompted to "select **H** (for HmX), **M** (for MAXM), **S** (for STKS) or **O** (for Onyx)". Make the appropriate selection.

4) The next prompt will be to specify collection to be for a file or a directory. Select [D] for Directory.

5) The system will copy the data from the DMS hard drive to the LS 120 Super Disk.

**Figure D.1-3 Raw Data Collection Screen 2**

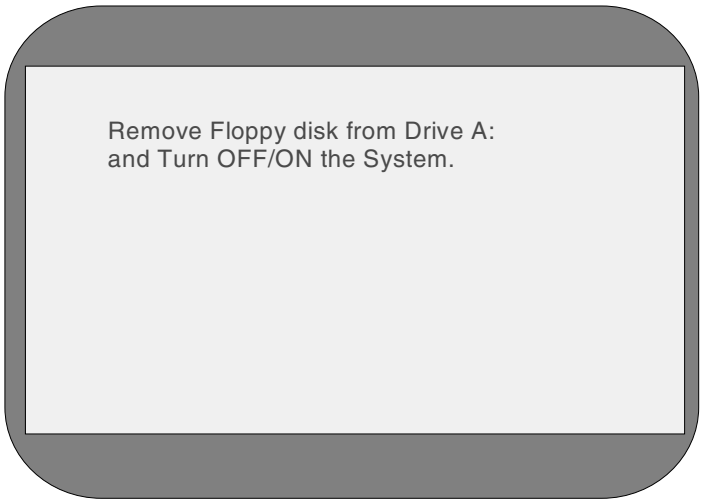



**c. Discontinue collection and storage of Raw Data**

1) When data transfer is complete, remove the Raw Data Collection Boot Disk from the DMS floppy diskette drive A.

2) Reset the system.

**Figure D.1-4 Raw Data Collection Screen 3**




3) Remove the LS 120 disk from the Super Drive. The system no longer recognizes the Super Drive and is no longer in service mode. Raw data collection has stopped.

**d. Delete Raw Data from Hard Drive**

1) From the DMS **Main Menu**, press Esc to remove any drop-down windows.
2) To get to the DOS prompt, press Spacebar, Ctrl+D **then** Alt+D.
3) Type **cd** and press Enter.
4) Type **cd\raw**, then press Enter.
5) Type **dir**, then press Enter.
6) The screen will display a list of files that are in the Raw Data Samples directory. Each sample will have three files with one of three extensions, .hdr, .inf, or .dat.
7) Type **del c:\raw*.***
8) When asked, "***are you sure?***" Type Y and press Enter.
9) Type Exit and **press** Enter.
10) The **Main Menu** should appear. Press Enter at the prompt.
11) Resume operation.

## D.2 Raw Data Collection Procedure for STKS™ Analyzer, Software Version 3C and Higher

### Scope

The Raw Data Collection procedure explains how to collect Raw Data, sometimes called listmode data from the Coulter® STKS™ Analyzer, software version 3C and higher onto a 120 MB Super Disk.

### Purpose

The intent of this document is to provide a means of collecting data so that it can be reviewed or "post-analyzed". Data collected from samples that are run with "raw data" enabled becomes portable allowing for in-depth analysis at the Cellular Analysis Development Center. Raw data is required for evaluation of problems that may arise with existing algorithms. Additionally, a large raw database containing normal and abnormal samples is required for algorithm development.

### Tools/Supplies Needed

- ❑ External Super Disk Drive and parallel cable: (contact Miami Technical Support)
- ❑ Super Disk 120 MB removable floppy disk: (contact Miami Technical Support)
- ❑ Raw Data collection boot disk: (contact Miami Technical Support)
- ❑ Service Disk 2 or Service Disk 3
- ❑ STKS™ Analyzer Raw Data Interface Box: (contact Miami Technical Support)
- ❑ STKS™ Analyzer Raw Data Interface Cable: (contact Miami Technical Support)

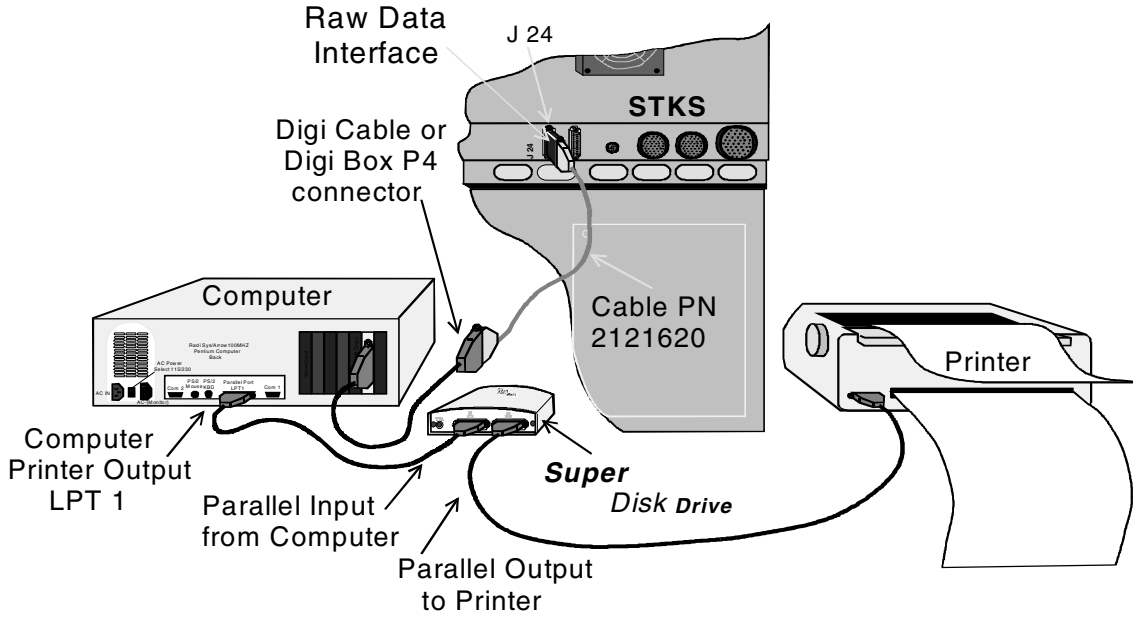
### Samples

Any patient samples can be collected with raw data enabled. All samples must be run in the Raw Data Screen. (See Step 3-a)

### Procedure

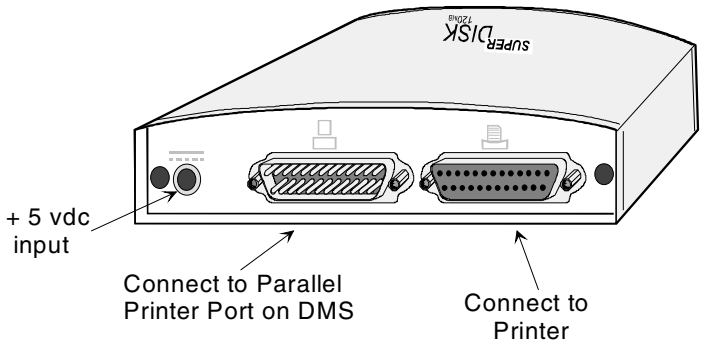
1. Set Up Instrument. (Refer to Figure D.2-1.)
   a. Turn the Analyzer/Diluter power off and remove the MPU Card. Set (dipswitch 1 - position 2 to off). Seat the MPU card back into the Analyzer.
   b. Connect the Raw Data Interface box provided by technical support to J24 on the back of the Analyzer.
   c. Connect cable PN 2121620 provided by technical support to the P4 connector of the digicable or digi-box.
   d. Turn power back on to the Analyzer/Diluter.

**Figure D.2-1 STKS™ Analyzer Cable Configuration for Raw Data Collection**




2. Set Up the DMS
   a. From the STKS™ Analyzer DMS Main Menu, Set print option to Print ALL results by selecting [F5] (other) from the Main Menu, then [F5] (print).
   Press [Spacebar] to toggle to "**ALL**". Press [Esc] to exit back to the Main Menu.
   b. Insert Service Disk 2 or Service Disk 3 into the A diskette drive.
   c. From the STKS™ Analyzer DMS Main Menu access **Special Functions ▸▸ Diagnostics ▸▸ Service Options**.
   d. Type **service** when prompted for password then press [Enter].
   e. Highlight **Raw Data** and press [Enter] to enable the Raw Data Screen.
3. Generate Data
   a. All samples must be Run with the Raw Data Screen open at the DMS.
4. Confirm that Raw Data has been saved
   a. View the raw data collection results that print as samples are run.
5. Transferring Raw Data from the DMS hard drive to the Super Disk
   a. Set Up the 120 MB Super Drive. Refer to Figure D.2-2.

**Figure D.2-2 Connector End of Super Disk Drive.**

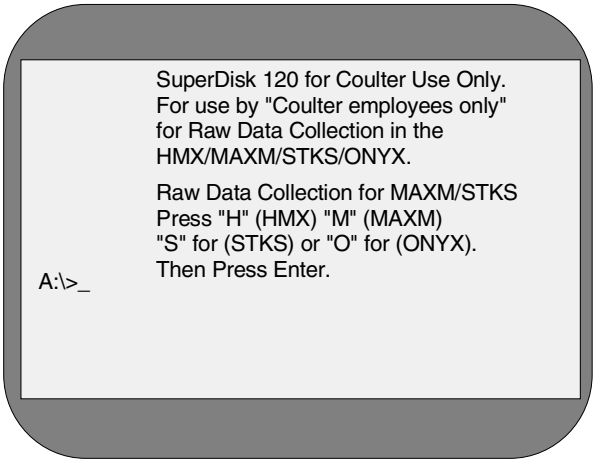



1) Disconnect the printer cable from the parallel port (male connector) of the DMS computer.
2) Connect the male connector of the Super Disk Parallel Cable to the DMS parallel port and secure it in place.
3) Attach the printer cable which was just removed from the parallel port to the female connector on the Super Disk Drive and secure it in place.
4) Connect the female connector of the Super Disk parallel cable to the Super Disk Drive male connector.
5) Plug the round power cord connector from the 5VDC power adapter into the "5VDC" outlet on the back of the Super Disk Drive and plug the adapter into the AC socket (wall, Power Strip, or uninterrupted power supply).
6) Insert a formatted LS 120 disk into the Super Disk Drive.

b. Set Up the DMS and transfer of data

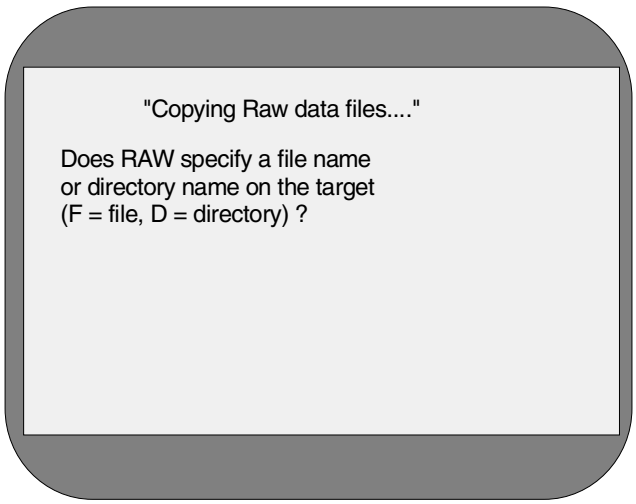
1) Insert the Raw Data Collection "Boot Disk" into the DMS floppy drive A.
2) Turn off/on the DMS and follow the instructions on the screen.
3) If the LS 120 disk in the Super Drive does not contain data, you will be prompted to "Select **H** (for HmX), **M** (for MAXM), **S** (for STKS) or **O** (for Onyx). Make the appropriate selection.

**Figure D.2-3 Raw Data Collection Screen 1**



4) The next prompt will be to specify collection to be for a file or a directory. Press [D] for directory

**Figure D.2-4 Raw Data Collection Screen 2**



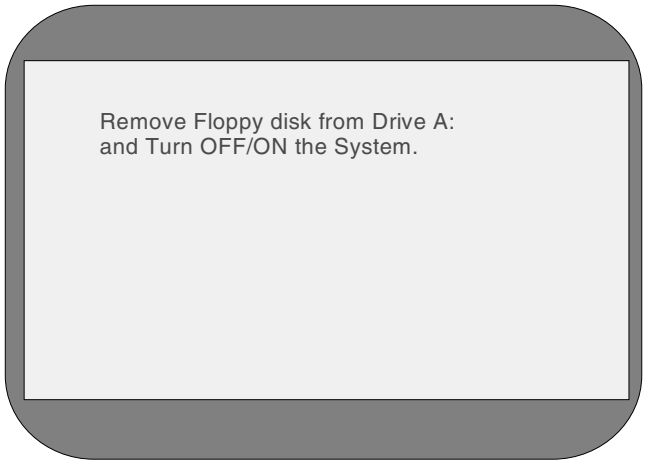

5) The system will copy the data from the DMS hard drive to the LS 120 disk.

c. Discontinue collection and storage of Raw Data.

1) When data transfer is complete, remove the Raw Data Collection Boot Disk from the DMS floppy diskette drive A and reset the system.

2) Remove the LS 120 disk from the Super Drive. The system will no longer recognize the Super Drive and is no longer in Service Mode. Raw Data collection has stopped.

**Figure D.2-5 Raw Data Collection Screen 3**




6. Delete Raw Data from the DMS Hard Drive

a. From the STKS™ Analyzer DMS Main Menu access **Special Functions ▸▸ Diagnostics ▸▸ Service Options**.

b. Type **service** when prompted for password then press [Enter].

c. From the Service Options Menu, select Remote Service Line to get to the DOS prompt.

d. Type **cd** and press Enter.

e. Type **cd\data** and press Enter.

f. Type **dir** and press Enter.

   The screen will display a list of files that are in the Data Samples directory. Each sample will have three files with one of three extensions, .hdr, .inf, or .dat.

g. Type **del***.* and press Enter

   The screen will display "***C:\dat > are you sure?***"

h. Type Y and press Enter.

i. Type **exit** and press Enter to return to the Service Options Menu.

j. Disable the Service Disk and bring the DMS back to the Main Menu.

k. Resume operation.