

MemScan

Computer Download System

SYSTEM REQUIREMENTS

The following are minimum requirements for installation and operation of this software on Windows 3.x or Windows 95. Unless noted otherwise, they apply to both operating systems:

- IBM., or compatible, Personal Computer
- Intel, 80486DX, 40 MHz to Pentium 200 MHz
- 4MB of available RAM for Windows 3.x (8MB of available RAM for Windows 95)
- 4MB of available hard drive storage
- LPT (parallel port)
- Mouse
- 3.5" floppy disk drive
- VGA card or compatible video graphics adaptor
- PC compatible printer (optional)
- MS-DOS version 3.1 for Windows 3.x (MS-DOS version 6.2.2 for Windows 95)
- Microsoft, Windows 3.x, or 95

INTRODUCTION

Welcome to MemScan and thank you for choosing a software product from U.S. Divers! The software program provides two separate program icon selections - MemScan Matrix Master and MemScan Matrix Master Help.

The Matrix Master software program, together with the MemScan hardware, will enable you to download (copy) data from your Matrix Master dive computer to your personal file that you will create in the PC program.

This user's manual describes the installation and use of hardware and software provided in the MemScan package. If any of the following are missing from the package, please contact your local U.S. Divers dealer.

Program installation disk

User manual

Interface cable with integrated PC connector and IR Nest

It is assumed that the user is familiar with the IBM PC computer platform with the Microsoft Windows 3.x or 95 operating system, and the U.S. Divers Matrix Master dive computer.

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**MemScan User Manual for Matrix Master
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TRADEMARK NOTICE

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HARDWARE WARRANTY

U.S. Divers guarantees, to the original purchaser only, that the MemScan hardware will be free of defects in materials and/or craftsmanship under normal use for two years from date of purchase, provided proper care and use are performed as described within this user's manual. Should your MemScan hardware prove to be defective for any reason (other than those listed in the limitations section below) it will be repaired or replaced (at U.S. Divers' discretion) free of charge excluding shipping and handling charges. This

warranty will be considered void if the registration card is not filled out completely at the time of purchase and mailed to U.S. Divers within 30 days of purchase. This warranty is non-transferrable and applies to the original purchaser only. All correspondence concerning this warranty must be accompanied by a copy of the original sales receipt and a copy of the owner's portion of the warranty registration card.

STATEMENT OF LIMITATIONS - GENERAL

Warranty does not cover damage from accident, abuse, power surge or interference, tampering, lack of proper care, or improper use of the MemScan hardware. Modifications or repair by anyone other than U.S. Divers Factory Service will void the warranty. U.S. Divers will not be responsible for recovery or replacement of the product in the event of loss or theft. U.S. Divers, its distributors, and retailers make no warranties, either expressed or implied, with respect to this product or its owner's manual except those stated in the preceding paragraphs.

In consideration of the sale of the MemScan hardware to you, you agree and understand that in no event will U.S. Divers, its distributors or retailers, be held liable for any personal injuries resulting from its operation, or for any other damages whether direct, indirect, incidental, or consequential even if U.S. Divers is advised of such damages.

Some states do not allow the exclusion or limitation of implied warranties or liabilities for incidental or consequential damages, so the above limitation may not apply to you.

Warranty does not extend to the velcro strap, or damage due to accident, abuse, modification, or tampering.

SOFTWARE MEDIA WARRANTY

U.S. Divers will replace defective software media and documentation at no charge, provided you return the item(s) to U.S. Divers together with proof of purchase within the sixty day warranty period. **All implied warranties on the media, including implied warranties of merchantability and fitness for a given use, are limited to the sixty day warranty period that begins with the date of original purchase.**

U.S. Divers makes no warranty, either expressed or implied, with respect to software quality, performance, merchantability, or fitness for a given use. As a result, this software is sold "as-is" and you, as the purchaser, are assuming the entire risk as to its quality and performance.

In no event will U.S. Divers, its distributors or retailers, be held liable for any direct, indirect, incidental, or consequential damages resulting from any defect in the disk or its documentation even if U.S. Divers is advised of such damages. U.S. Divers' liability to you for any damages, regardless of cause or form of action shall be limited to replacement of the software, and no other damages.

FCC COMPLIANCE / INTERFERENCE

This equipment (MemScan PC interface hardware) has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These rules are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate e equipment.

Shielded signal and power cables must be used with this equipment at all times to ensure compliance with the radio frequency emission limits for this device.

SOFTWARE INSTALLATION

The MemScan software is supplied as an installation program in a compressed format and must be installed on the hard drive of the PC for proper use. During installation, files will automatically be decompressed and a MemScan program window and directory established. Instructions for Windows 3.x start below, and those for Windows 95 start on page 12.

TO INSTALL FOR WINDOWS 3.X


At the Windows Program Manager:

- Insert the **disk** in the PC disk drive (assume 'A').
- Select **File** and select **Run**
- Type **A:\SETUP** on the command line
- Select **OK** (to continue), or Cancel (to discontinue setup).
- Wait (approximately 20 second), while the installer is placed in a temporary file.
- At the MemScan-Matrix Master dialog box, select **Install** (to continue), or Exit (to discontinue setup).
- At the Enter Your Name dialog box, type your **name**, and select OK (to continue).
- At the Enter Serial Number dialog box, type the **serial number** printed on the label of the setup disk, and select **OK** (to continue),
- At the Select Installation Drive dialog box, select a local fixed drive (usually 'C'), and select **OK** (to continue).
- At the Setup dialog box, select your new path (default would be **C:\MMMASTER**), and select **OK** (to continue).
- Wait (approx. 1 minute) while files are installed.
- When installation is complete, MemScan will automatically restart Windows. Remove the disk.

TO UNINSTALL FOR WINDOWS 3.X

At the Windows Program Manager:

- Insert the disk in the PC disk drive (assume 'A').
- Select File and select Run.
- Type A:\SETUP on the command line.
- Select OK (to continue), or Cancel (to discontinue).
- Wait (approximately 20 seconds) while the installer is placed in a temporary file.
- At the MemScan-Matrix Master dialog box, select Uninstall (to continue), or Exit (to discontinue).
- At the MemScan-Matrix Master Uninstallation dialog box, select OK (to remove the previous directory and continue), or select Cancel (to discontinue).

 **Warning: An OK response is final, and the previous directory cannot be restored.**

- At the MemScan-Matrix Master Uninstallation dialog box (after the uninstallation is completed), select OK and remove the disk.
- Restart Windows before running any applications programs.

TO INSTALL FOR WINDOWS 95

At the Windows 95 Desktop:

- Click the **Start** button on the task bar.
- Select **Run**.
- Insert the **disk** in the PC disk drive (assume 'A').
- Type **A:\SETUP** on the Open line of the Run dialog box.
- Select **OK** (to continue), or Cancel (to discontinue).
- Wait (approximately 20 second), while the installer is placed in a


temporary file.

- At the MemScan-Matrix Master dialog box, select **Install** (to continue), or Exit (to discontinue setup).
- At the Enter Your Name dialog box, type your **Name**, and select **OK** (to continue).
- At the Enter Serial Number dialog box, type the **serial number** printed on the label of the setup disk and select **OK** (to continue).
- At the Select Installation Drive dialog box, select a local fixed drive (usually 'C'), and select **OK** (to continue).
- At the Setup dialog box, select your new path (default would be **C:\MMMASTER**), and select **OK** (to continue).
- Wait (approx. 1 minute) while files are installed.
- When installation is complete, MemScan will automatically restart Windows. Remove the disk.

TO UNINSTALL FOR WINDOWS 95


At the Windows 95 desktop:

- Click the Start button on the task bar.
- Select Run.
- Insert the disk in the PC disk drive (assume 'A').
- Type A:\SETUP on the Open line of the Run dialog
- Select OK (to continue), or Cancel (to discontinue).
- Wait (approximately 20 seconds) while the installer is placed in a temporary file.
- At the MemScan-Matrix Master dialog box, select Uninstall (to continue), or Exit (to discontinue).
- At the MemScan-Matrix Master Uninstallation dialog box, select OK (to remove the previous directory and continue), or select Cancel (to discontinue).

 **Warning: An OK response is final, and the previous directory cannot be restored.**

- At the MemScan-Matrix Master Uninstallation dialog box (after the uninstallation is completed), select OK and remove the disk.
- Restart Windows before running any applications programs.

HARDWARE INSTALLATION

 **Caution: Do not connect or disconnect any PC cables unless power to the PC and all peripheral devices is turned off.**

Locate an LPT (25 pin) parallel port on the back, or side, of the PC. If your PC has a single LPT port, and you have a printer connected to it, you will have to disconnect the printer to plug in the MemScan interface cable while downloading the Matrix Master. If this will be inconvenient, or if downloading will be frequent, you may wish to consider installing an LPT switch box available from most computer accessory retailers.

- Plug the 25 pin connector on the end of the MemScan interface cable into the PC LPT port, or the LPT switch box.
- Refer to your PC hardware manual, or the supplier of your PC hardware, to clarify any questions pertaining to the ports or configuration of your system.
- Ensure that all devices are turned off, prior to disconnecting the MemScan cable connector from the port box.

MEMSCAN MATRIX MASTER PROGRAM

This program is used to establish individual diver files, download (copy) dive profile data from the Matrix Master dive computer, view specific dive data in tabular and graphical format, or reinitialize if the CPU is upgraded.

To access the MemScan-Matrix Master program package and its Windows icons - in Windows/Program Manager:

- Double click the Matrix Master icon.

- Select Continue. The main menu appears.
- The MemScan-Matrix Master main menu now appears on screen. Program selections include - Operation, Log, and Help.

OPERATION

(see details beginning at end of this page)

- **Test IR Nest** - to verify that the hardware (IR Nest) is connected properly to the proper LPT port and functional.
- **Reinitialize System** - to reinitialize in the event that the PC's CPU is upgraded to another speed.
- **Download** - to download profile data from the Matrix master dive computer to the PC.
- **Convert Dive Data** - to convert data from download DOS files to Windows log files.
- **Exit** - to quit the MemScan-Matrix Master program.

LOG

This portion of the program is used to create and edit personal log files, maintain a record of training, and access specific data and graphic profiles for the individual dives placed in the log.

Note: Your personal file must be created prior to downloading your dive data from the Matrix Master.

To create a new log file -

- Select **LOG**
- Select **Add**
- Type in information as desired (starting with 'Name').

Note: Name is a required entry, others are at your option. Also, to protect the dive data sent to that specific file, the Name cannot be changed once it is saved.

- Select Save (Save File As box appears), or select Cancel (to discontinue, delete the entries, and return to the main file menu)
- On the File Name line of the Save File As dialog box, type in the desired File Name by replacing the 'asterisk(*)' in the File Name entry line with the diver name' (8 letters max).

For example:

Replace File Name: *.log

With File Name: **jim.log**

Caution: The file name must include dog

- Select **OK** (to accept the name and revert to the main file menu).

To Update an Existing Personal Log File

- Select the desired **name** in the Select Name box located in the upper left corner of the screen.
- Select **Update**.
- Edit information as desired starting with **Address**. (To protect files, Name cannot be changed).
- Select **Save** (to update the record), or select Cancel (to discontinue, retain existing information, and return to the main file menu).

Other Operations

- Select **History** (to see the Total accumulated Dives, total Violation Dives, total Decompression Dives, and total Dive Time for the Name selected).
- Select **Delete** (to remove the log file selected).
Warning: The Delete operation is final and you will not be able to retrieve the file.
- Select **Help** (to access the Help menu) -
- Select **Print** (to print the record sheet on screen).
- Select **Exit** (to return to the main menu).

To Access and View a specific Dive's Data

- Select the desired name in the Select Name box located in the upper left corner of the screen.

Note: Dive data is stored in download groups that are 'date stamped' with the day of download. The list appears to the right of Name. The last group downloaded will appear at the bottom of the list.

- Select the desired download group.
- Select the Dive to be viewed from the list located on the left side of the screen.

Note: Dives are listed by Dive # for that activation period. Refer to the Matrix Master Owner's Manual for information regarding numbering of dives.

- Select **Dive Data** (to view specific data in a spreadsheet format for the dives in that group).
- Select **Graph** (to view dive data in graphical format).
- Select **Units** (to toggle between English and Metric units of measure).
- Select **Delete** (to remove that dive from the listing).
- Select **More Data** (to view additional, more detailed, information pertaining to the dive). See the explanation given on page 20.
- Select **Print** (to print the data on screen).
- Select **Exit** (to return to the Personal Log Directory).

Graph

Information displayed above the graph corresponds to the leading end of the graph line as it is being drawn on the screen, or to a specific point selected on the graph.

Displayed, from left to right, are:

- Dive identifier (number).
- Depth, bottom time, and maximum depth.
- No Decompression (or Decompression) time.
- Compartment Loading Bar Graph.

Located along the bottom are operational controls:

- Select **Slow** (to reproduce the graph at low speed).
- Select **Normal** (to reproduce the graph at a moderate speed).
- Select **Fast** (to reproduce the graph at a high speed).
- Select **Grid** (to display horizontal and vertical grid lines). Select again to remove grid lines.
- Select **Print** (to print the screen).
- Select **Exit** (to return to the Dive Data screen).

Note: Violations that occurred during the dive will appear as red segments on the graph line.

More Data

Information is displayed in tabular format corresponding sequentially to data samplings taken during changes in the diver's depth throughout the dive period.

Provided are - Bottom Time, Compartment Loading Bar Graph color, and No Decompression Limit (if the bar graph was Green or Yellow) or Decompression Time (if the bar graph was Red).

- Select **Units** (to toggle between English and Metric units of measure).
- Select **Print** (to print the screen).
- Select **Exit** (to return to the Dive Data screen).

OPERATION

Reinitialize

This Operation is used only in the event that your PC has been upgraded and the CPU speed changed since the time that the MemScan software was

originally installed. Use at other times will not affect the program in the system.

Note: If the speed of the PC operating system is changed, the Download portion of the program will not function until the system is reinitialized.

To Reinitialize:

- Select **Operation** and **Reinitialize System**.
- Select **OK** (to reinitialize the system), or select **Exit** (to return to the main menu).

INITIALIZING SYSTEM appears on the screen (flashing) with a message "It may take a while please wait". After about 20 seconds the screen will shift to the main menu. No user action is required.

Note: Initializing will not occur, or be observed, during subsequent download operations.

Test the IR Nest (interface hardware)

This Operation is used to verify that the interface hardware is properly connected and the correct LPT port selected, prior to download of data.

To Test the IR Nest:

- Select **Operation** and **Test IR Nest**.
- If the Incorrect port was selected, choose another.
- Select **OK** (to accept the port and return to the main menu).

Download data

This Operation is used to Download (copy) dive data from the Matrix Master dive computer to the PC.

To Download data:

- Select **Operation** and **Download**.

Note: This operation is DOS based and requires one time initialization, which will perform automatically the first time the download feature of the program is used. Initializing will not occur, or be observed, during subsequent download operations.

INITIALIZING SYSTEM appears on the screen (flashing) with a message "It may take a while please wait". After about 40 seconds the screen will shift to Download Instructions. No user action is required.

- Press the PC **esc** key at any time (to revert to the MemScan-Matrix Master main menu). The message "Download will ask for the name of a file to place data in. Has the diver's personal file been created?" appears on the screen.
- Select **Yes** (to continue with download), or select **No** (to return to the MemScan main menu, to access and add the diver's personal Log file).

Note: MemScan will not allow you to continue with the download function until the file is named.

- Activate the Matrix Master dive computer by pressing the button **once**.
- Observe as the unit performs diagnostics and then enters the Surface Mode.
- **Position** the **IR Nest** on top of the Matrix Master lens, and **align** the infrared **sensor ports** of the two devices.
- **Secure** the **Nest** firmly with the velcro **strap** and keep it in place throughout download.
- Press and hold the Matrix Master button until **EA:6** appears on the display screen (approx. 6 seconds), then -
- Immediately release the Matrix Master button and press the PC 'enter' key.

Note: The PC 'enter' key must be pressed within 6 seconds after having released the Matrix Master button. Repeat if necessary.

Observe 'DOWNLOAD' flashing on the PC screen with the messages '-Reading EEPROM Page - - of 1023', and 'Please Wait'.

Note: Keep the Nest in place while the grey block completely fills with yellow (about 4 minutes).

Observe the following messages indicating that download is complete :

'You have downloaded successfully — times for today'

'Saving information to File: - - - .txt'

'Press any key' (to revert to the Main Menu)


- **Remove** the **Nest** from the Matrix Master lens.

It will be necessary to use the Convert Dive Data operation to place the dives into the diver's log.

To Convert Dive Data

- Select **Operation** and **Convert Dive Data**.
- At the Open dialog box, click on the downloaded file name that you wish to convert (ex: m6082600.txt). Files are identified by a product code (m), the year (6 is 1996), the date of download (0826 is August 26), and the number of times downloaded that day (00, 01, 02, etc.).
- Select **OK** (to continue with conversion of that download file), or select **Cancel** (to return to the MemScan-Matrix Master main screen).
- At the 'Request Information' dialog box:
All dives stored in the Matrix Master (40+) are downloaded each time the operation is performed. Since some may already have been placed in your log file, you can bypass them, converting and adding only new dive information to your log.

The first dive to appear will be the most recent dive made with the Matrix Master. To **bypass** this dive, select **Bypass** with the 'Add to Diver name' function. The second most recent dive will appear.

 **Caution: Once a dive is 'Bypassed', it will not be available for placement in your log unless the Matrix Master is downloaded again.**

To convert that dive's data and store it in your log, proceed as follows:

Note: Use the mouse, or press the PC tab key, to move between information entry boxes.

- Type in the 'Location' of the dive, the 'Dive type', and name of your 'Buddy' (optional entries).

Note: The Matrix Master does not time stamp the dives in its memory, so Dive Date and Dive Time must be entered here for each dive.

- Type in the '**Dive Date**' and the **time** that the dive started ('Dive Time') and select 'AM' or 'PM' with the mouse.
- At the 'Add to diver name' entry box, select the **diver's name** whose log file you want to place that dive in, or select **Bypass** and **Okay** to skip that dive.
- Select **Okay** (to convert the dive's data and send it to the selected diver's log file, or select **Cancel** (to discontinue conversion and return to the MemScan-Matrix Master main menu).
- Observe 'MemScan - Convert Data Complete'.
- Select **Okay** (to return to the main menu).

The Matrix Master dive computer will store the data from 40+ dives in memory. Once the memory becomes full, the Matrix Master will store new data by writing over existing data on a 'first in - first out' basis. Therefore, downloading should be conducted after each set of dives, and prior to activities involving numerous dives, such as a dive vacation.

Dive data is not removed from the Matrix Master when it is downloaded (copied) to your PC program, and will be downloaded each time you perform the function, until it is eventually written over.

Since dive data is not date and time stamped in the Matrix Master, it is suggested that you download and date your dives as soon as possible after completion of your activities.

DOWNLOAD TROUBLESHOOTING

NEST OPEN

If the message 'Nest Open' appears -

- Press any PC key to return to the MemScan main menu.
- Select **Operation** and **Test IR Nest**.

- Follow the instructions, choosing another LPT port.
- Select OK to save the proper LPT selection.

TIME OUT

If the message "10 Second Time-out", appears -

- Press any PC key and repeat the download procedure.

INTERRUPTION DURING DOWNLOAD

If the messages "Checking nest — time-out is — Wakeup failed, press any key" appear when the EXTERNAL ACCESS message is on screen -

- Press any PC key to revert to Download Instructions.

PC LOCKS UP

If your PC locks up during download and the message "First (or second) Handshake Failed" appears -

- Simultaneously press the ctrl, alt, and delete PC keys (to restart Windows and return to the Matrix Master MemScan main menu).

SOFTWARE SUPPORT

8am - 5pm PST

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