



Operating Instructions ERO•SCAN® Database Software

Ear	Test Date	Result	Protocol	Tester	Notes	Test #	Instrument SN	Probe
Right	4/21/2014 11:14:26 AM	PASS	DP-4s			2	ME1001053	ME2001724
Left	4/21/2014 11:15:39 AM	PASS	DP-4s			5	ME1001053	ME2001724

F2	L1	L2	DP	NF	SNR	
2.0	65	55	-3	-12	9	P
3.0	64	52	-1	-20	19	P
4.0	61	52	10	-20	30	P
5.0	63	53	13	-20	33	P



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ERO•SCAN® Database Software

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Operating Instructions ERO•SCAN® Database Software

Title: Operating Instructions – ERO•SCAN® Database Software



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Operating Instructions

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1 Introduction

The ERO•SCAN® Database Software is a data management tool that complements the MAICO ERO•SCAN Screener and Diagnostic Plus. It provides the ability to transfer patient OAE test data from the device to a PC for the purposes of viewing, archiving, managing, and printing OAE reports. For Newborn Hearing Screening Programs, the database integrates with 3rd party database tools such as HiTrack and OZ eSP.

1.1 Intended Use

The ERO•SCAN Database Software is used to view, archive, and report OAE data acquired from the MAICO ERO•SCAN Otoacoustic Emissions (OAE) unit. Screening and diagnostic data is acquired from the MAICO ERO•SCAN. The ERO•SCAN unit is connected to a PC and the OAE data is transferred to the Database Software. The Database Software can also be a vehicle to generate and transfer patient names to the ERO•SCAN unit. The OAE data is used as part of an audiologic diagnostic evaluation or as part of the infant hearing screening programs for newborns or infants. The results are of interest to the audiologist, otolaryngologist, nursing staff, and/or nurse managers.

Test results obtained with the ERO•SCAN can only be transferred, viewed, and saved within the Database Software if the device is connected to a PC. Previously acquired data may be viewed for evaluation without a connection to the ERO•SCAN.

Data transferred from the ERO•SCAN includes Transient Evoked Otoacoustic Emissions (TEOAE) or Distortion Product Otoacoustic Emissions (DPOAE) from each ear, displayed in graphic and tabular formats. The data will include screening or diagnostic data of both or either OAEs. Screening data will include results that include Pass, Refer, Noise, or No Seal. Diagnostic test results include the absolute responses at each stimulus, the noise floor and/or the Signal to Noise ratio of the response at each stimulus. The patient demographic and test result data is saved to a directory for future retrieval and/or converted to electronic format for transfer to an EMR program.

The Database Software provides reports in electronic formats that are compatible with electronic medical records including PDF, RTF, JPEG, TIFF, GIF, PNG, BMP, EMF, and WMF.



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2 Setup

2.1 Precautions for Patient Confidentiality

- Store a backup of the data in a safe manner.
- Create backups of patients' data regularly.
- To avoid data from being misused if stolen, the data must be encrypted.
- All users should have a unique login to the PC.
- When using a third party networked software, the communication to the database should be secure (encrypted) to avoid client information being captured during network transmission. See the third party user manual for details.
- When using a third party networked software, all users should have a unique login to the database to ensure traceability and identification of data when updated or deleted from the database. See the third party user manual for details.

2.2 Prerequisites

2.2.1 ERO•SCAN® Database Software PC Minimum Requirements

- CPU: 1 GHz
- RAM: 512 MB
- Hard Disk: 2 GB
- USB Port: 1 for each connected instrument
- Optionally, an additional USB port will be required if a printer is connected to the PC
- Display Resolution: 1024 x 768
- CD-ROM Drive (if installing from a CD)
- Network connection if installing from a network location
- Network connection if printing to a network printer
- Internet Explorer 6.0 or later
- Current service pack is recommended

2.2.2 ERO•SCAN® Database Software Supported Operating Systems

- Microsoft Windows® 8
- Microsoft Windows® 7
- Microsoft Windows® Vista
- Microsoft Windows® XP Professional or Home (Service Pack 3)
- Microsoft Windows® Server (2003 or newer); Windows Imaging Component (WIC) must also be installed

2.2.3 ERO•SCAN® Database Software Requirements

- Microsoft .NET Framework version 4.0 (bundled with installer if not already installed)
- PDF Viewer
- FTDI USB Driver for instrument connection



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3 Installation Instructions

The ERO•SCAN Database Software is provided with the purchase of each ERO•SCAN device. The installation process can be completed by the CD or a USB thumb drive.

- For installation from the CD:
 - Insert CD in to the CD drive.
 - Use Windows Explorer to navigate to setup.exe.
 - Double click and follow the instructions.
- For installation from the USB thumb drive:
 - Insert the USB thumb drive in to an available USB port on the computer.
 - Use Windows Explorer to navigate to setup.exe.
 - Double click and follow the instructions.

NOTE: If you already have an older version of application installed, it will be replaced if it was installed from the same path. If you use a different drive for CD, uninstall the older application first manually by using Control Panel.

Always make a copy of the database file and store the copied file in a safe location during a new install or upgrade.

3.1 Connecting the ERO•SCAN® to the PC

- For connection with USB
 1. Make sure the ERO•SCAN is charged.
 2. Use a standard USB to micro USB cable.
 3. Plug the hexagon connector (micro USB B plug) into the USB port on the ERO•SCAN.
 4. Plug the USB connector (A plug) into a USB port on the computer.
 5. Power on the PC and launch the Database Software.
 6. Power on the ERO•SCAN.
 7. The ERO•SCAN will display "Ready" or "Waiting for PC".
 8. The Database Software will automatically detect the ERO•SCAN.
 9. The Database Software is now ready for data or name transfer.

- For connection with Bluetooth®

NOTE: When pairing to a computer for use with the Database Software, confirm the computer has Bluetooth availability or a Bluetooth dongle will be required. Confirm the Bluetooth settings of the computer are as shown in Figure 1, page 4.



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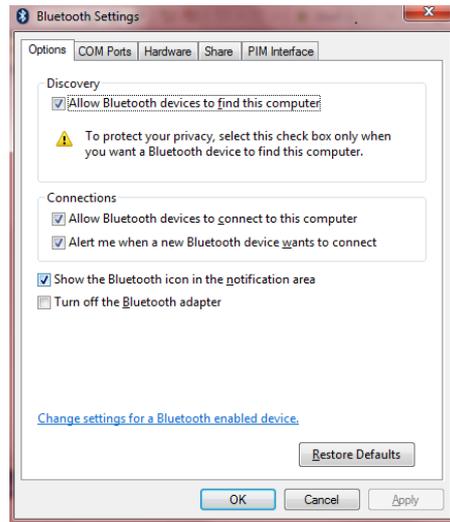


Figure 1: Bluetooth Settings

1. Make sure the ERO•SCAN is charged.
2. Power on the ERO•SCAN.
3. On the ERO•SCAN, navigate to the **New BT Device** menu.
4. Press the <Discover> arrow to initiate discovery of available Bluetooth devices.
5. The ERO•SCAN searches for approximately 15 seconds. During this time the message '**Please Wait**' appears on the ERO•SCAN screen.
6. Identified Bluetooth devices are displayed when the Discovered screen is shown.
7. Select the correct Bluetooth device by pressing the <Left or Right> arrow until the PC is displayed on the ERO•SCAN screen.
8. Select the ▼Down arrow to Pair.
9. While the device is pairing to the computer a notification will display on your computer "Add a device". Select this notification on your computer and enter PIN 1234.
10. The first time the ERO•SCAN Database Manager Software is opened, select 'Detect Com Port' within the Database software to finalize the ERO•SCAN connection. This is located within the Transfer area of the toolbar and only required the first time the ERO•SCAN is connected.

NOTE: For Bluetooth pairing instructions using the device (steps 3-8 above), review the *ERO•SCAN Operating Instruction – Bluetooth Device Pairing section 17.1*.

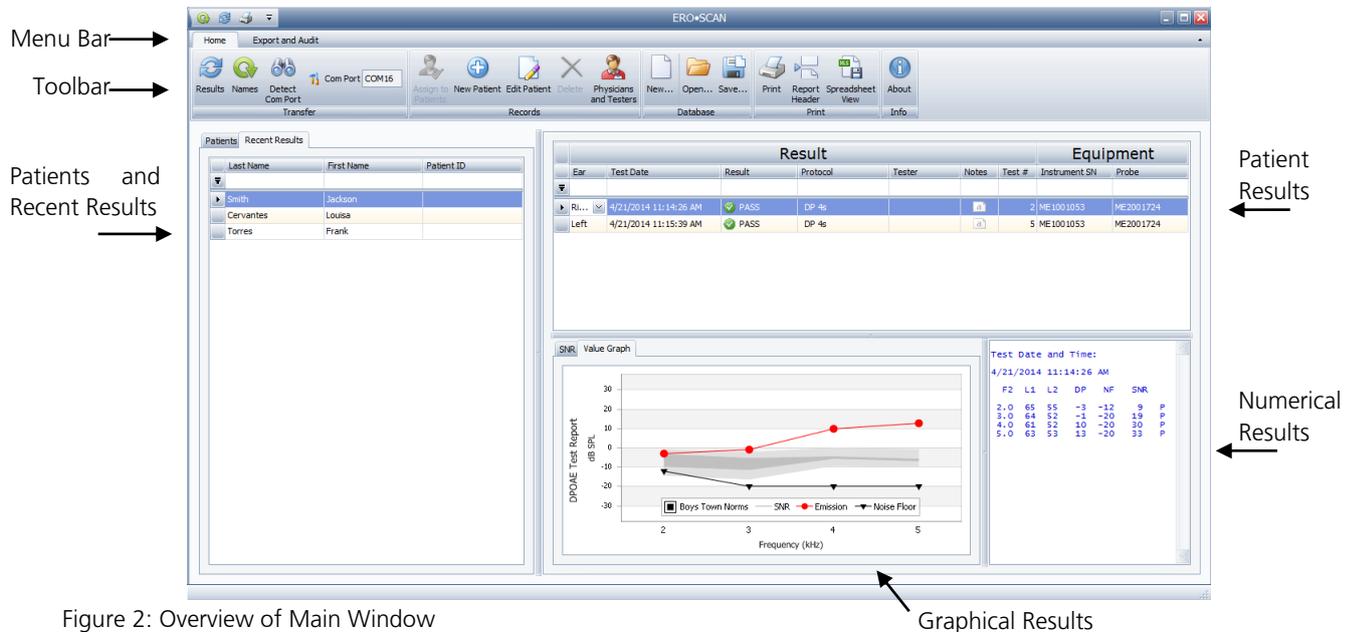


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4 General Functionality

4.1 Overview

For an overview of the general functionality see Figure 2.



4.1.1 Main Window Details

Menu Bar

Home Tab: The majority of functions such as viewing test data, adding patients, and transferring patient names are accessible in the Home Tab.

Export and Audit Tab: Allows for exporting patient data to 3rd party database tools used for NHS patient tracking and for auditing ear or test changes made to patient records. Settings for the Database Software are also displayed in this tab.

Tool Bar

Tool Bar: A row of icons in the Home Tab and Export/Audit Tab that activate key functions when clicked.

Patients and Recent Results

Patients Tab: Displays a cumulative list of all patients that have been transferred into the Database Software including the most recent. "Unnamed" is always included in this tab for test data that have been transferred from the ERO•SCAN device that have not been assigned to a specific patient.

Recent Results Tab: Displays the most recent list of patient and/or test results that have been transferred from the ERO•SCAN for easy access to the most current data.



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NOTE: For new databases, the first set of patients and data will display in the Patients Tab only.

Patient Results

Displays all test records for a selected patient.

Numerical Results

Displays OAE test data of selected test in numerical form.

Graphical Results

Value Graph Tab: Displays in graphical form, the OAE test data of the selected test from the Patient Test Results list.

SNR Tab: Displays the Signal/Noise Ratio across test frequencies in bar graph form of the selected test result from the Patient Test Results list.

4.2 Home Tab Functions

4.2.1 Transfer Information to and from ERO•SCAN®

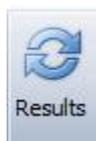
Figure 3 shows the Toolbar's Transfer Section.



Figure 3: Toolbar Section Transfer

Results: Transfer test results from the ERO•SCAN to the Database Software using USB connector:

1. Turn on the ERO•SCAN.
2. Connect the ERO•SCAN to the PC using the micro USB connector.
3. The application will default to the previously used Com Port number and automatically detect the ERO•SCAN on that port. (See *Detect Com Port* below if this is the first time the instrument has been connected.)
4. ERO•SCAN will display "Ready" or "Waiting on PC".
5. Click **Results** icon to begin data transfer.
6. The "Recent Results" tab will show the latest uploaded test results. (The Patient Tab will show all patient data transferred.)



Results: Transfer test results from the ERO•SCAN to the Database Software using Bluetooth:

1. Turn on the ERO•SCAN.
2. Click **Results** icon to begin data transfer.
3. Immediately press the ▲UP arrow on the device to display the Bluetooth screen for data transfer.
4. Press ◀CONNECT▶ (on device) for data transfer.
5. The "Recent Results" tab will show the latest uploaded test results. (The Patient Tab will show all patient data transferred.)



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Names: Transfer patient names to the ERO•SCAN using USB connector:

1. Turn on the ERO•SCAN.
2. Connect the ERO•SCAN to the PC using the micro USB connector.
3. The application will default to the previously used Com Port number and automatically detect the ERO•SCAN on that port. (See *Detect Com Port* below if this is the first time the instrument has been connected.)
4. ERO•SCAN will display "Ready" or "Waiting on PC".
5. Click on the **Names** icon and a Store Names to Instrument window will appear (Figure 4).

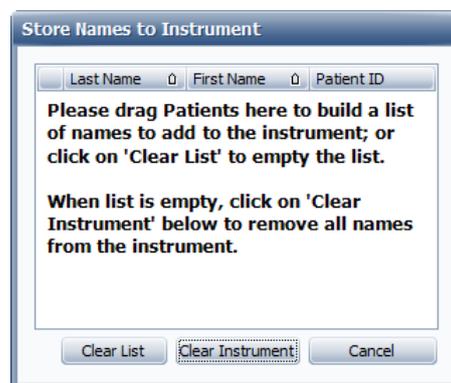


Figure 4: Store Names to Instrument

6. If necessary, clear the previously transferred list by clicking **Clear List**.
7. If desired, click Clear Instrument to delete all patient and test records on the ERO•SCAN.
8. Per on screen instructions, drag names from the Patients list to build the ERO•SCAN list.
9. The order of patient names displayed on the ERO•SCAN will be the same order as on the Database Software. If desired, click on the column header to sort names prior to storing.
10. Click **Store Names** to transfer names to the ERO•SCAN as shown (Figure 5).



Figure 5: Screen Store Names to Instrument



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Names: Transfer patient names to the ERO•SCAN using Bluetooth:

1. Click on the **Names** icon and a Store Names to Instrument window will appear.
2. If necessary, clear the previously transferred list by clicking **Clear List**.
3. If desired, click Clear Instrument to delete all patient and test records on the ERO•SCAN. Once Clear Instrument (Figure 4, page 7) is selected immediately Press the ▲UP arrow on the device to display the Bluetooth screen for data transfer. Then press ◀CONNECT▶(on device) for action to take place.
4. Per on screen instructions, drag names from the Patients list to build the ERO•SCAN list.
5. The order of patient names displayed on the ERO•SCAN will be the same order as on the Database Software. If desired, click on the column header to sort names prior to storing (Figure 3).
6. Click **Store Names** to transfer names to the ERO•SCAN (Figure 5).
Once **Store Names** is selected immediately Press the ▲UP arrow on the device to display the Bluetooth screen for data transfer. Then press ◀CONNECT▶(on device) for action to take place.



Detect Com Port: Detect the Com Port for the ERO•SCAN connection:

1. Turn on the ERO•SCAN and connect to the PC using the micro USB connector or Bluetooth connection.

NOTE: Bluetooth connection requires pairing to the computer prior to **Detect Com Port** selection. See section 3.1 *Connecting the ERO•SCAN® to the PC*, page 3. Pairing is only required upon initial data transfer.

2. Click **Detect Com Port** when the ERO•SCAN instrument is connected for the first time or when connecting a different ERO•SCAN device.

4.2.2 Manage Patient Records

Figure 6 shows the Toolbar's Records Section.



Figure 6: Toolbar Section Records



Assign to Patients: Assigns unnamed tests to patient names. Transferred test results will be listed as "Unnamed" if patient names were not transferred to the device prior to testing.

1. Add all New Patient names to the database (see instructions below).
2. Click on the **Assign to Patients** icon.
3. Drag the unnamed test results from the list on the left, to the corresponding patient on the right (see Figure 7, page 9).



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NOTE: Multiple tests can be transferred at once by pressing the Ctrl key when selecting tests.

4. A confirmation window will pop up stating the patient name and number of tests to be transferred. Click **OK** if accurate.
5. Click **OK** when all transfers are complete.

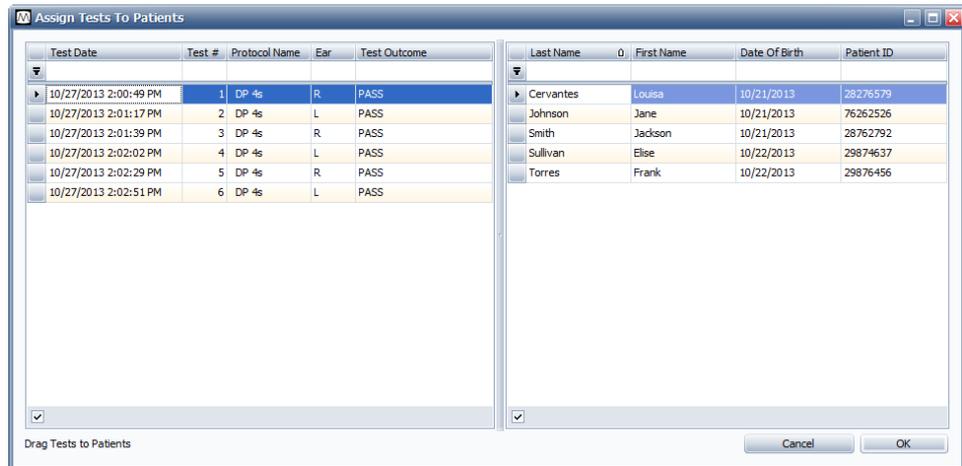


Figure 7: Screen Assign Tests to Patients



New Patient: Add a new patient record to the Database Software.

1. Click on the **New Patient** icon and the New Patient information Screen will open (Figure 8).
2. Enter patient demographics, last name or patient ID is required.
3. Enter patient specific history.
4. Click **OK** to save new patient.
5. For NHS programs, use the **Newborn Specific** tab to enter demographics such as mother's last name, nursery type, etc.

NOTE: HiTrack requires Last Name, Date of Birth and Patient ID for export of data to occur.



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Figure 8: Screen New Patient Information



Edit Patient: Edit a Patient Record:

1. Select a Patient from the Patient list.
2. Click the **Edit Patient** icon.
3. Add to, or correct, patient information.
4. Click **OK** to save.



Delete: Delete a Patient or Test from the database:

1. Click on the Patient name in the list or the specific test to be deleted.
2. Click the **Delete** icon.
3. A warning window will pop up with the specific patient name/test to be deleted.
4. Click **Yes** to *permanently* delete the patient and test results from the database.
5. Click **No** to cancel the delete function.



Physician and Testers: Add Physician and Testers Names (Figure 9). It is possible to build a list of referring physicians and testers that can be assigned to the patient record in the New Patient tab.

1. Click on the **Physicians and Testers** icon.
2. Click "+" to add a name to the individual list.
3. Enter the name on the line as it will appear in the database and on the report.
4. Click **OK** to save.



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Figure 9: Screen Physicians and Testers

NOTE: To access this function, **No Exports** must be selected in the Export/Audit Tab.

NOTE: Once a Physician is entered, selection can be made from the **New Patient** screen. The Tester is available in the **Patient Results** section.

4.2.3 Manage Database Files

Figure 10 shows the Toolbar's Database Section.



Figure 10: Toolbar Section Database

New: Create a New Database:

1. Click on the **New Database** icon.
2. Name and save the New Database file to the desired location on the PC. Then click **OK**.
3. The program will now exit and a window will pop up. Click **OK**.

NOTE: The previous database will be archived.

4. The ERO•SCAN Database Software will automatically close.
5. Re-open the Database Software to view the new and *empty* database.



Open: Open an Existing Database:

1. Click the **Open Folder** Icon.
2. Locate and highlight the desired database file and click **Open**.

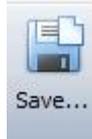


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3. The program will now exit and a window will pop up. Then click **OK**.
4. The ERO•SCAN Database Software will automatically close.
5. Re-open the Database Software to view the selected database.

Save: Save a Database:



1. Click on the **Save Database** icon.
2. Name and Save the current database file to the desired location on the PC.
3. A confirmation window will pop up. Click **OK**.
4. The ERO•SCAN Database Software will automatically close.
5. Re-open the Database Software to view the newly named database file.

NOTE: It is recommended that all databases be named for easy access to historical patient test results.

NOTE: Upon software installation, the default database name is MAICOpatient.mdb and is located at C: Users/XXX. It is recommended to save and name the default database to the desired location on your computer.

4.2.4 Print Patient Reports

Figure 11 shows the Toolbar's Print Section.



Figure 11: Toolbar Section Print

Print: Print Patient Reports including demographics, numerical, and graphical OAE results.



1. Select the patient record to be printed in the Patients list.
2. To print all test results, click on the **Print** icon to view the report.
3. To print selected test results, select the desired tests in the Patient Test list.

NOTE: Select multiple tests to be printed by pressing the Ctrl key when selecting tests.

4. Click **Print** to view report.
5. Click **Quick Print** to print directly to default printer.
6. Click **Print** to select a printer or to print multiple copies.
7. Click **Export** icon to access electronic printing options such as PDF, RTF or image file (BMP, JPEG, TIFF, etc.).



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8. Close **Print Preview** to return to the main window of the ERO•SCAN Database Software (Figure 12).

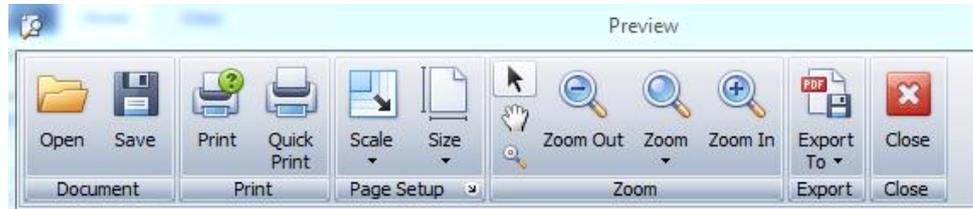


Figure 12: Toolbar Print Preview

Report Header: Entering Report Header:



1. Click on the **Report Header** icon and the Test Report Header Options Screen will open (Figure 13, page 13).
2. Enter the Clinic/Hospital name and address to appear in the report.
3. Click **OK** to save.

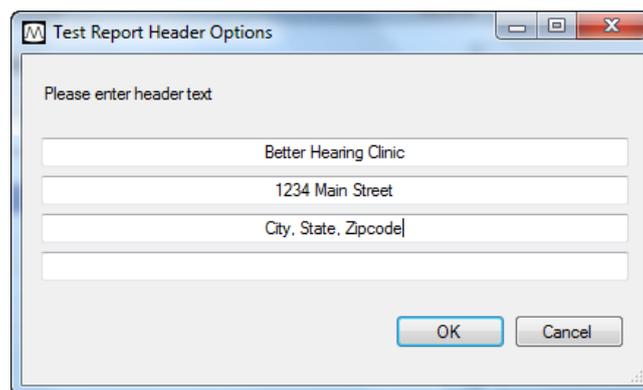
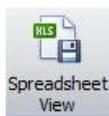


Figure 13: Screen Test Report Header Options

Spreadsheet View: The Spreadsheet View allows patient data to be exported to an Excel file where two tabs will be display, Test Results and Statistics. The Test Results tab exhibits all results from the patient record fields. The Statistics tab exhibits the percent of Pass, Refer and Other test results by tester:



1. Select the patient record(s) to be placed in the spreadsheet from the Patients list.

NOTE: Select multiple tests by pressing the Ctrl key when selecting tests.

2. Click on the **Spreadsheet View** icon (Figure 14).
3. Click on **Save As** to export the document for excel operations to be conducted on the data.
4. Click **Quick Print** to print directly to default printer.
5. Click **Print** to select a printer or to print multiple copies.
6. Click **Print Preview** to view report.
7. Click the red X to **Exit** and to return to the Database Software.



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Figure 14: Spreadsheet View Toolbar

4.2.5 Database Information

Figure 15 shows the Toolbar's Info Section.



Figure 15: Toolbar Section Info.

Clicking on the **About** icon will show the version of the Database Software in use (Figure 16). You can also view the name and location of the database in use.

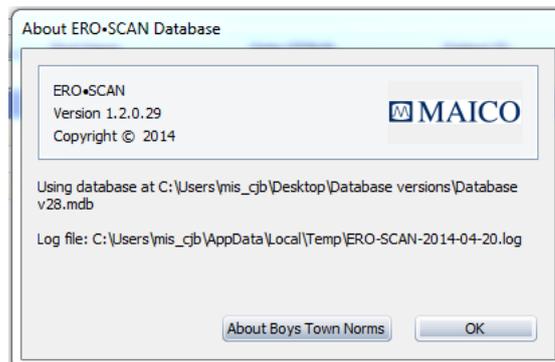


Figure 16: Screen About ERO•SCAN Database

Selection of **About Boys Town Norms** button reveals a template with the explanation displayed in the window. Users should refer to the reference article for additional information (Figure 17).



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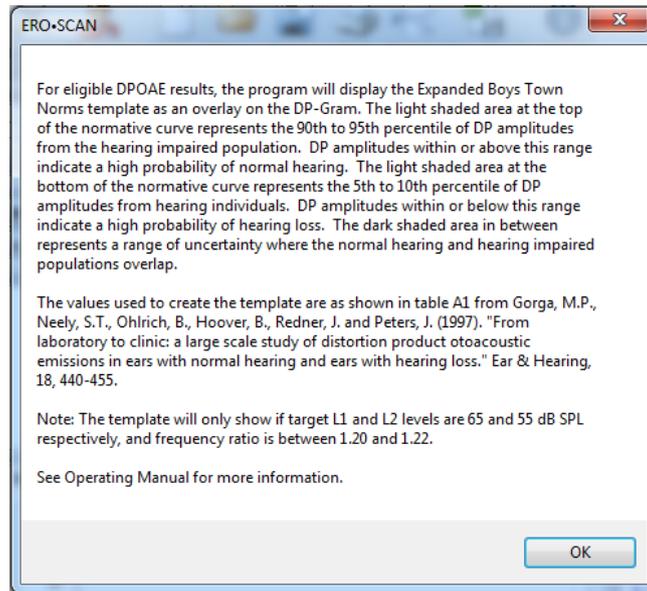


Figure 17: About Boys Town Norms

4.3 Export and Audit Toolbar Functions

4.3.1 Settings

Figure 18 shows the Export Toolbar Section for the Settings.



Figure 18: Export Toolbar Section Settings

No Exports: This is the recommended default selection for Non-Newborn Hearing Screening facilities.

Patient Identifiers: Patient Identifiers determine the two fields that are viewed on the ERO•SCAN when transferring Names to the device. The default setting for the first field is the 'Last Name', the default for the second field is the 'First Name'. The Patient Identifiers are used to select alternatives for the last name and first name. Alternative identifiers can be used by selecting a field in the First Identifier and Second Identifier columns.



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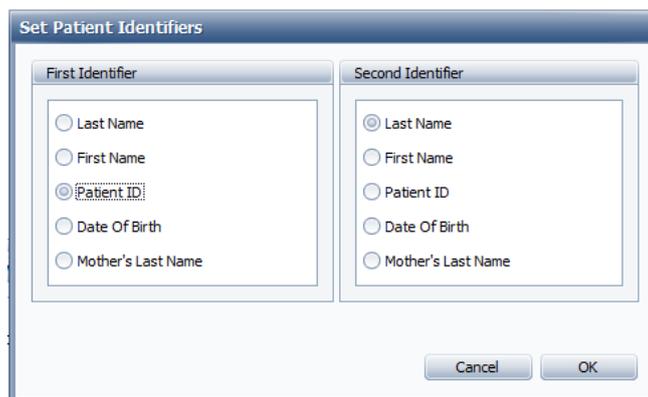


Figure 19: Set Patient Identifiers

NOTE: The selected Patient Identifiers must be completed in the New Patient record or the names will not be transferred to the device.

NOTE: The ERO•SCAN uses two fields to identify the patient. Both fields are visible during the scrolling function to select a patient. After a patient is selected on the device, only the first field is displayed for testing. It is important that the first field is a unique identifier for the examiner to know the correct patient is selected.

Language: Language allows the user to select the desired language for the ERO•SCAN Database Manager. Once the language is selected, it will be in use next time the program is started.

Languages available are:

- English
- German
- Chinese
- Italian

NOTE: Depending on the language, it is possible that some words will still be shown in English.

NOTE: Language selection for the device is separate from the ERO•SCAN Database Manager. For further information on selecting the language within the device see *Section 17.8 Language* in the ERO•SCAN Operating Instructions.



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4.3.2 Export to OZ eSP

Figure 20 shows the Export Toolbar Section for Export to OZ eSP.



Figure 20: Export Toolbar Section Export to OZ eSP

1. In Settings, select **Use OZ eSP**.
2. Click the appropriate icon to export **All Records** or **New Records**.
3. The export status window will display the number of exported records and the location of the exported file.
4. Click **OK** to complete.

4.3.3 Export to HiTrack

Figure 21 shows the Export Toolbar Section for Export to HiTrack.



Figure 21: Export Toolbar Section Export to HiTrack

In Settings, select **Use HiTrack**.

1. Click the appropriate icon to export all **New Records** or **All Records**.
2. The export status window will display the number of incomplete records and/or the number of exported records and the location of the exported file.
3. Click **OK** to complete.
4. Click **Export Folder** to select a folder where HiTrack export file will be exported.
5. Click **Pick List Folder** to access the location of a facility's Pick Lists, such as screener or physicians names, used for tracking purposes.

4.3.4 Audit

Figure 22 shows the Export Toolbar Section for Audit.



Figure 22: Export Toolbar Section Audit

1. Click on **Ear Changes** to review test records that had Test Ear changed.
2. Click on **Test Changes** to review patient specific test results that have been re-assigned from one patient name to another.



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5 Viewing Patient Data

Figure 23 shows the Screen Overview of the Patient Data.



Figure 23: Screen Overview of Patient Data

5.1 Viewing Patient Details

Patients: Cumulative lists of all patient names in the database including most recently transferred results (Figure 24). The selected Patient is highlighted in blue.

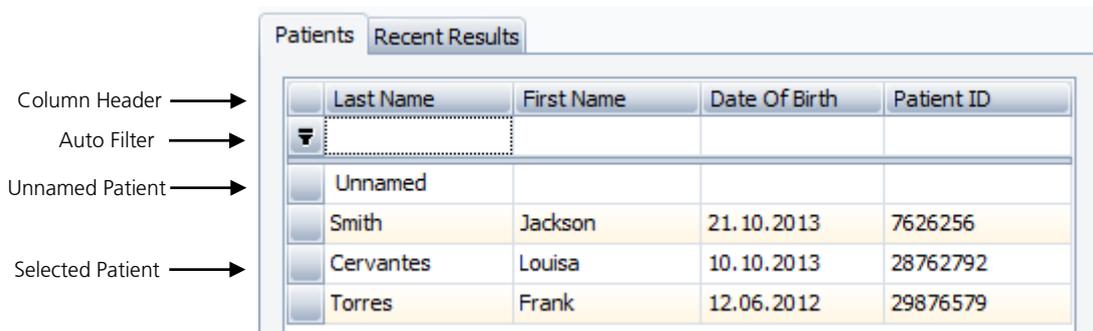


Figure 24: Screen Patient List

Sorting Column Header Information: Click on the column header to sort the information below it. Example: Clicking on the Last Name will sort the last names alphabetically from A to Z and an arrow is displayed next to the header name. Clicking on the Last Name again will sort the last names from Z to A. To disable Sorting command, select Ctrl and right mouse click the column header.

Auto Filter: This tool assists in quickly finding a patient or tests when the patient database is large. Type the text for the variable you are searching for in the open field. All applicable patient records will be displayed. In the example below (Figure 25), all patients named Jones were identified



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by typing Jones in the Auto Filter field. To close Auto Filter and view the entire database, click on the X at the bottom of the patient window.

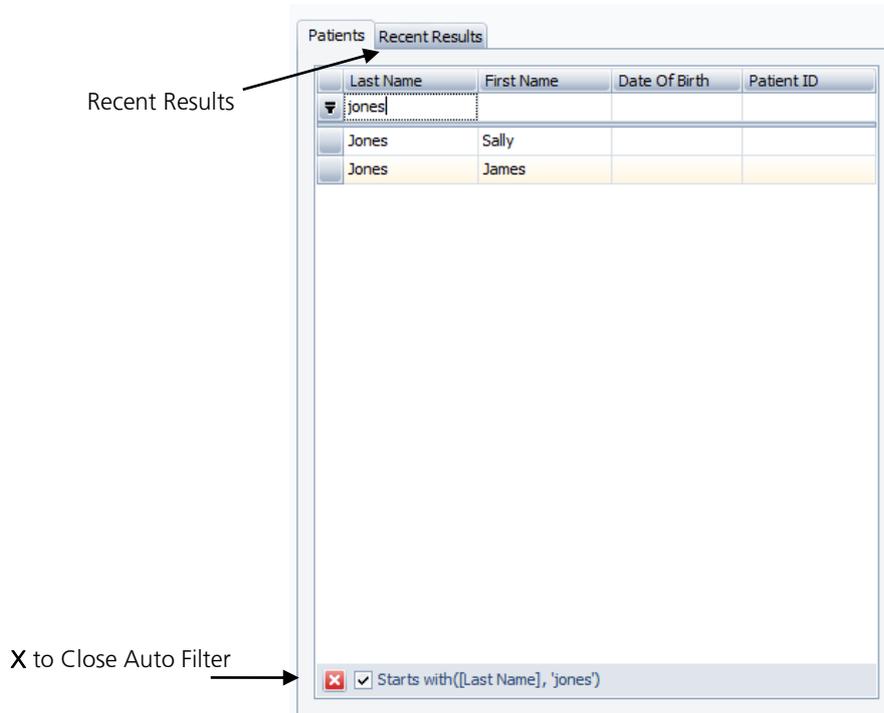


Figure 25: Functionalities of Screen Patient List

“Unnamed” Patient: Appears in the patient list when data has been transferred from the ERO•SCAN but not assigned to a patient name.

Selected Patient: The selected or active patient is always highlighted in blue. Click on the row of the patient you want to select.

Recent Results Tab: List of all patients and/or tests that were most recently transferred from the ERO•SCAN to the Database Software for easy access. This includes all functions as stated above for Patient List.

NOTE: For new databases, the first set of data transferred will appear in the Patients list only.



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5.2 Viewing Patient Results

Result: Cumulative list of test results obtained on selected patient.

Equipment: Includes the serial numbers of the ERO•SCAN unit and the Probe that were used to collect the results.

Result							Equipment	
Test #	Ear	Test Date	Outcome	Protocol	Tester	Notes	Instrument SN	Probe
1	Right	10/27/2013 1:31:06 PM	PASS	DP 4s			ME1000001	ME2001001
2	Left	10/27/2013 1:31:43 PM	PASS	DP 4s			ME1000001	ME2001001

Figure 26: Screen Result List

Sorting Column Header Information: Click on the column header to sort the information below. Example: Clicking on Test Date will sort the dates from most recent to oldest date and an arrow is displayed next to the header name. Clicking on the Test Date again will sort the dates from oldest to newest. To disable Sorting command, select Ctrl and right mouse click the column header.

Auto Filter: This tool assists in quickly finding specific test results such as all Outcomes. Close the Auto Filter and view the entire database by clicking on the X at the bottom of the patient window.

Selected Test: The selected or active patient is highlighted in blue.

Equipment: The serial number of the probe and the ERO•SCAN unit is displayed with each test result.

Results: A display of the test results of selected tests in a graphical and Numerical form (Figure 27).

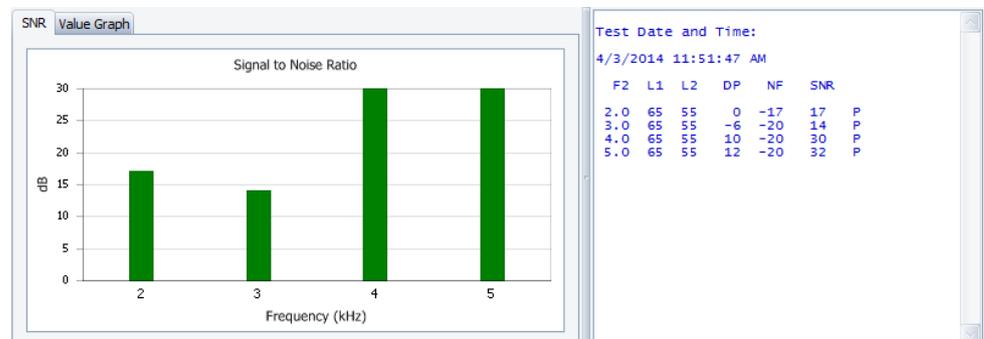


Figure 27: Graphical and Numerical



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Value Graph: Displays the graph of OAE test data showing amplitude in dB SPL of the emission and noise floor across the test frequency range. Ear data is color and symbol coded: red circles for right, blue X's for left (Figure 28).

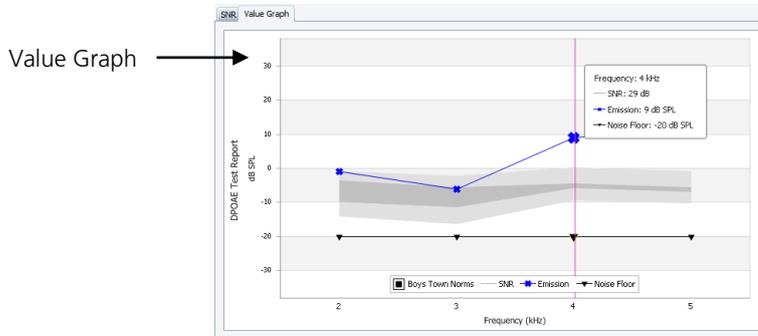


Figure 28: Screen Value Graph

Value Graph Details: Hover the mouse over an individual data point to view details at that frequency as shown above. The enlarged symbols (e.g. enlarged blue X and diamond symbols) designate the selected response.

Boys Town Norms: Boys Town Norms allow the normative data to be displayed for qualifying DPOAE measurements. This displays when the Value Graph is used as shown in Figure 28. The user may optionally show the Boys Town Norms on the Value Graph. To remove from the Value Graph, click the black box next to Boys Town Norms (Figure 28). The Boys Town Norms template is explained in a pop up window (Figure 16, page 15). Users should refer to the reference article for additional information.

SNR: The SNR Tab displays the signal to noise ratio at each test frequency in bar graph form (Figure 29). For the default screening bar graphs, green bars represents pass, orange bars represent non-pass. Diagnostic bar graphs are displayed in grey unless a PASS criteria is set in the protocol.

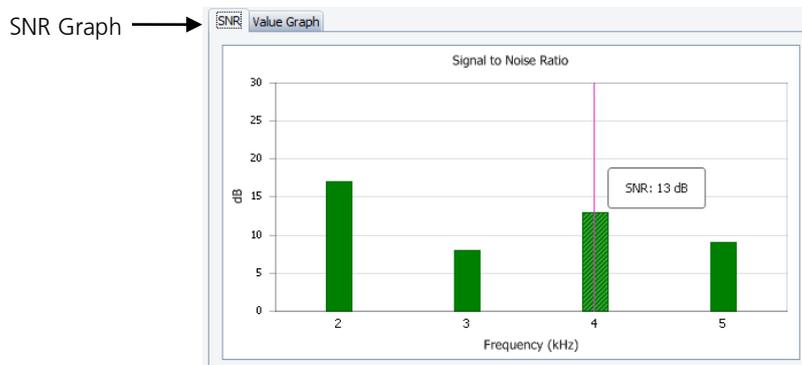


Figure 29: Screen SNR Graph

SNR Details: Hover the mouse over an individual data point to view the specific SNR at that test frequency as shown below.



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Specific Numerical Test Results: The numerical view of a specific test provides complete test information including F2 frequencies, L1 and L2, DP or TE, NF, SNR, and outcome (Figure 30). A 'P' will be displayed at each frequency only when a PASS criteria has been set in the device and that frequency passed. If the frequency does not pass, nothing will be displayed.

The screenshot shows a window titled "Test Date and Time:" with the date and time "10/27/2013 1:31:43 PM". Below this is a table of test results with columns for F2, L1, L2, DP, NF, SNR, and an outcome column. The data rows are as follows:

F2	L1	L2	DP	NF	SNR	
2.0	65	55	-3	-20	17	P
3.0	65	55	-12	-20	8	P
4.0	65	55	-7	-20	13	P
5.0	65	55	-11	-20	9	P

Figure 30: Screen Specific Numerical Test Results



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6 Customizing the Display

Upon installation, columns and data windows are sized to best fit your computer screen. Columns of data can be added, deleted, or moved in the Patient and Results windows to customize your software.

6.1 Customization of the Patients Tab

Sort Columns: Right click in column header such as Last Name (see Figure 24, page 18) to sort the information below. Example: Clicking on the Last Name will sort the last names alphabetically from A to Z and an arrow is displayed next to the header name. Clicking on the Last Name again will sort the last names from Z to A. To disable the Sorting command, select Ctrl and right mouse click the column header.

Move Columns: To move columns, click and drag column header to the desired location.

Add Columns: To add columns in Patients tab left click on the header bar and a pop up will display. Select **Column Chooser** (Figure 31) to obtain the Customization window (Figure 32). Drag the column of data you want to add to the desired location in the Patients Tab.

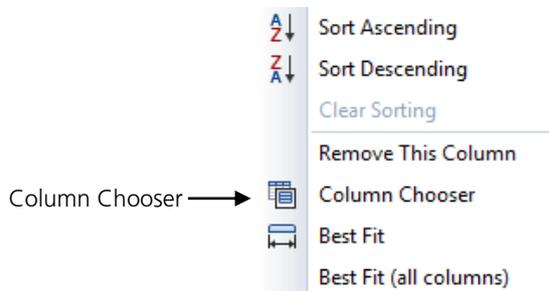


Figure 31: Screen Column Chooser



Figure 32: Screen Customization

Remove Columns: To remove columns, click on the column title in Patients tab and drag back to the customization window.



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NOTE: Adding multiple columns of data will alter the Main Window view. Click on the X to close the Customization window.

6.2 Customization of the Results Tab

Sort Columns: Right click in column header to sort the information below. Example: Clicking on Test Date will sort the dates from most recent to oldest date. Clicking on the Test Date again will sort the dates from oldest to newest.

Move Columns: To move columns, click and drag column header to the desired location.

Add Columns: Click on **Column/Band Chooser** (Figure 33) to obtain the Customization window (Figure 34). Drag the column of data you want to add to the desired location in the Patients Tab.

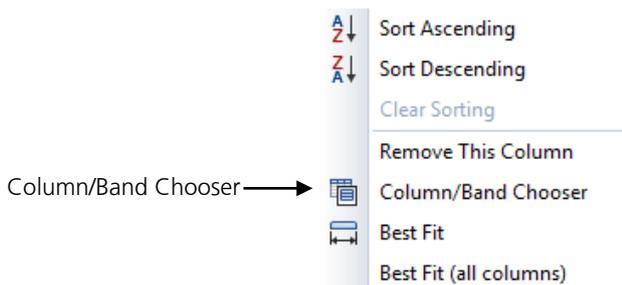


Figure 33: Screen Column/Band Choose

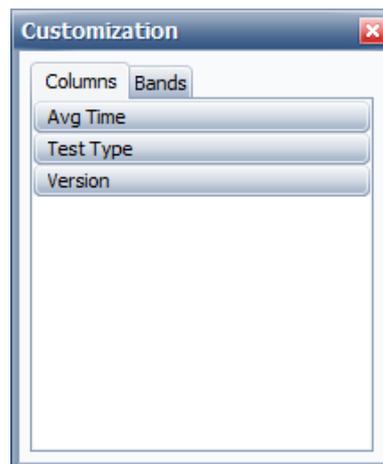


Figure 34: Screen Column Customization

Remove Columns: To remove columns, click on the column title in Patients tab and drag back to the Columns tab in the customization window.

Remove Bands: To remove an entire band (section) of fields, such as the Equipment band, click on the band title in the Patients tab and drag back to the Bands tab in the customization window (Figure 35).



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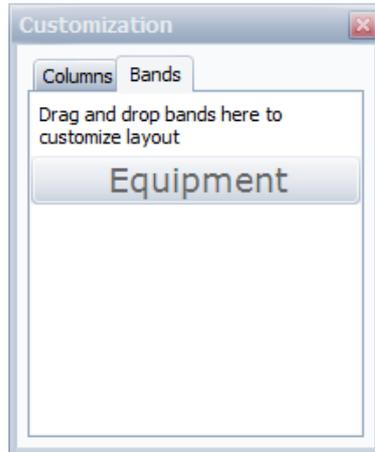


Figure 35: Screen Bands Customization

NOTE: Adding multiple columns of data will alter the Main Window view
Click on the X to close Customization window.



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7 Typical Use Cases

7.1 Transfer Patient Names to ERO•SCAN®, Transfer Data to Database Software

Typical use of the ERO•SCAN Database Software could include transferring patient names to the ERO•SCAN at the start of the day, testing patients, transferring data to the Database Software, or printing test results. The steps are as follows:

1. Launch the MAICO Database Software.
2. Click on the **New Patient** icon to add all patient names to be tested.
3. Turn on the ERO•SCAN and connect the device to the computer.
4. Click on the transfer **Names** icon.
5. Drag the patient names to be tested from the patient list to the **Store Names to Instrument** window.
6. Click **Store Names** to transfer to device.

NOTE: Previous test data will be deleted from the device prior to transfer.

NOTE: When using a Bluetooth connection to the PC, navigate to the Bluetooth transfer screen on the ERO•SCAN device. Press ▲UP from the main menu screen. Select ◀CONNECT▶ for the transfer to complete.

7. Complete all testing with the ERO•SCAN.
8. Turn on the ERO•SCAN and connect to the computer.
9. Click on the **Results** icon to transfer the test data from the ERO•SCAN to the computer.
10. Add notes to a specific test by clicking on the **Notes** icon in Results and enter.

NOTE: Notes will appear in the printed report.

11. To print, select the patient name and review test data.
12. Select the tests in the list to be printed and click on the **Print** icon.
13. Click **Quick Print** to print one copy of the report.

7.2 Collect Test Results, Transfer Results to Database Software, Assign Results to Patient

The ERO•SCAN can be set to automatically number each test. After transferring the data to the Database Software, each test number can be assigned to a patient name. In this scenario, it is important to *manually record* the Test Number displayed on the ERO•SCAN to the patient name/ear for each test so you can accurately assign tests to the appropriate patient name.



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NOTE: The ERO•SCAN must be set to the “250 Test” mode to automatically number each test. Refer to the ERO•SCAN Operation Instruction to set the ERO•SCAN to the **250 Test** mode.

NOTE: Include the **Test Number** in the Results window when using this process. Refer to section **Customization of the Results Tab** of this manual to add the Test Number.

The steps are as follows:

1. Test patients noting test numbers that appear on the ERO•SCAN after each test.
 2. Launch the ERO•SCAN Database Software, turn on the ERO•SCAN and connect.
 3. Click on the **Transfer** icon.
-

NOTE: When using a Bluetooth connection to the PC, navigate to the Bluetooth transfer screen on the ERO•SCAN device. Press ▲UP from the main menu screen. Select ◀CONNECT▶ for the transfer to complete.

4. Navigate to the **Recent Results** tab and click on the “Unnamed” patient to view all transferred tests.
 5. Add all names of patients tested by clicking on the **New Patient** icon.
 6. Click on the **Assign to Patients** icon.
 7. Drag all unnamed test results on the left side to the appropriate patient name on the right side of the window as shown and click **OK** when done.
 8. Select a patient from the Patient list and review all tests. Add notes to a specific test by clicking on the **Notes** icon in Results and then enter.
-

NOTE: Notes will appear in the printed report.

9. Select the tests in the list to be printed and click on the **Print** icon.
 10. Click **Quick Print** to print one copy of the report.
-

7.3 Archive and Back-up Patient Results

It is strongly advised that the data in the ERO•SCAN Database Software be periodically archived and backed up. Refer to the **Precautions** section of this user manual regarding patient data security when archiving or backing up data.



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8 Ownership, Warranty, and Disclaimer

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Specifications are subject to change without notice.



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