Welch Allyn® OAE Data Manager

Directions for use

Welch Allyn®

Advancing Frontline Care™

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This manual applies to **REF** 901031 OAE HEARING SCREENER.

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Contents

Introduction

This directions for use describes the capabilities and operation of the Welch Allyn OAE Data Manager (data manager).

The data manager is data management software that compliments the Welch AllynOAE Screener (screener). It provides the ability to transfer patient otoacoustic emissions (OAE) test data from the data manager to a computer to view, archive, manage, or print OAE reports; and transferring patient names to the screener. Auto Print is a tool which allows the user to bypass data management functionality while maintaining the ability to quickly print OAE test results. Auto Print is designed to be used instead of Data Manager.

Reports can be saved in different electronic formats or image formats and attached to electronic medical records (EMRs):

Format	Options
Electronic	.pdf, .rtf
Image	.jpg, .tif, .gif, .png, .bmp, .emf, and .wmf

Indications for use

The Welch Allyn OAE Data Manager Software is used to view, archive, and report OAE data acquired from the Welch Allyn OAE Hearing Screener device. Screening data is acquired from the Welch Allyn OAE Screener. The screener is connected to a PC and the OAE data is transferred to the Data Manager Software. The Data Manager Software can also be a vehicle to generate and transfer patient names to the device. The OAE data is used as part of an audiologic 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 Welch Allyn OAE Screener can only be transferred, viewed, and saved within the Data Manager Software if the device is connected to a PC via USB or wirelessly. Previously acquired data may be viewed for evaluation without a connection to the screener. Data transferred from the screener 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 data of both or either OAEs. Screening data will include results that include Pass, Refer, Noise, or No Seal.

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 Data Manager

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

Symbols

Documentation symbols
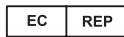
⚠️	**WARNING** The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death.
⚠	**CAUTION** The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data. This definition applies to both yellow and black and white symbols.

Regulatory symbols

Symbol	Description	Symbol	Description
SN	Serial number	EC REP	EU Authorized Representative
▲▲	Manufacturer	#	Reorder number
i 7d welchallyn.com	Consult directions for use (DFU). A copy of the DFU is available on this website. A printed copy of the DFU can be ordered from Welch Allyn for delivery within 7 calendar days.	R$_X$ ONLY	For use by or on the order of a licensed medical professional

About warnings and cautions

Warning and caution statements appear on the Welch Allyn OAE screener (screener), on the packaging, and on the shipping container.

Warnings and cautions

⚠ **WARNING** Use only the provided power supply to charge the screener. Injury to personnel or damage to the screener can result when a three-prong to two-prong adaptor is connected between the screener power supply and a mains outlet.

⚠ **WARNING** No modifications to the screener are allowed by anyone other than a qualified Welch Allyn service representative. Modification of the screener could be hazardous to patients and personnel.

⚠ **WARNING** The screener has been verified by an independent laboratory to conform to international standards for electromagnetic emissions and immunity (EMC). The user is advised to avoid installation and use of this screener in proximity to other products or equipment that may emit or be susceptible to electromagnetic interference, including cellular phones. If the screener is used adjacent to other products or equipment, you are instructed to verify that no disturbance is found in the operation of this or other equipment in proximity.

⚠ **WARNING** Any program aimed at obtaining reliable measurements of otoacoustic emissions should be staffed and supervised by appropriately trained individuals.

Precautions for patient confidentiality

Protecting patient information is essential to the relationship between provider and patient. It is critical to develop policies and procedures that safeguard electronic patient information stored by your organization. The following processes help ensure the security of your patient data.

- Create regular backups the data.
- Store a backup of the data in a safe manner.
- Encrypt data to avoid misuse if stolen.
- Create unique computer logins for all users.

- Encrypt all communication to the data manager when using a third party networked software in case information is captured during network transmission. See your third party user manual for details.

- Create unique software logins for everyone using a third party networked software. This enables you to trace and identify anyone who updates or deletes data from the data manager. See your third party user manual for details.

Setup

System requirements

Systems requirements are listed for:
- Computer (minimum)
- Operating systems
- Software

Computer requirements

Following are the minimum computer requirements needed for the data manager.
- CPU: 1 GHz
- RAM: 512 MB
- Hard Disk: 2 GB
- USB Port: 1 each for the screener, data manager and, if used, a printer
- Display Resolution: 1024 x 768
- CD-ROM: Required if installing from a CD
- Network connections: 1 each if installing from a network location or printing to a network printer
- Internet browser: Internet Explorer 6.0 or later and current service pack are recommended

Supported operating systems

- Microsoft Windows® 7.1 Professional, Windows® 8.1 Professional, and Windows® 10

Software requirements

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

Install the software

The software installation requires selection of Data Manager Software or Auto Print. Users that require full database functionality, detailed reporting tools, statistical analyses, and the like should install Data Manager. Users that require only a printout of test data without the use of the full database functionality should install Auto Print.

Always make a copy of the database file and store the file in a safe location before a new installation or upgrade.

Install from the CD

1. Insert the CD into the computer's CD drive.
2. Go to **Windows** > **Computer** > **CD Drive X** > **Start Application**.
3. Double-click **Start Application**.
4. Select **Welch Allyn Data Manager** or **Welch Allyn Auto Print.**
5. Click **OK**.
6. Follow the directions.

Connecting the screener

There are three options for connecting the screener to a computer:
- From the screener to a computer using a USB connection
- From the screener cradle to a computer using a USB connection
- From the screener to a computer using a wireless connection

Although the screener-computer USB connection is the most common setup, you can perform all functions with a cradle-computer USB connection or a wireless connection.

Connect the screener to a computer

Use a standard USB to micro-USB cable to connect the screener to a computer:

1. Power on the screener and ensure that the screener is charged.
2. Plug the micro-USB connector into the port on the bottom of the screener.
3. Plug the USB connector into a USB port on the computer.
4. Power on the computer, and then launch Data Manager or Auto Print.

   The message "Waiting On PC" appears on the screener.
5. Begin data transfer, name transfer, or auto print.

Connect the screener cradle to a computer

Use a standard USB-A to USB-B cable to connect the screener cradle to a computer.

1. Power on the screener and ensure that the screener is charged.
2. Plug the USB-B connector into the port on the back of the screener cradle.

   The cradle does not need to be connected to a mains outlet for data transfer.
3. Plug the USB-A connector into a USB port on the computer.

4. Place the screener in the cradle.

5. Power on the computer, and then launch Data Manager or Auto Print.

    The message "Waiting On PC" appears on the screener.

6. Begin data transfer, name transfer, or auto print.

You must use a USB-A to USB-B cable between the cradle and the computer for data transfer. The micro-USB port on the cradle does not support data transfer. Use the cradle for recharging the screener when power is supplied to the either the micro-USB or the USB-B port. Use the micro-USB port on the bottom of the screener for both data transfer and recharging.

Connect the screener to a computer using a wireless connection

Note   Wireless functionality is not available for Auto Print.

Note   You can only pair one device with the screener at any given time.

1. Power on the screener and ensure that the screener is charged.

2. Power on the computer, and then launch the data manager.

    The message "Waiting on PC" appears on the screener.

3. If this is the first time you are making a wireless connection between the screener and a computer, then on the Transfer section of the Home tab, click **Detect Com Port**.

4. Ensure that the screener pairs with your computer.

    Only the initial data transfer requires pairing the screener to the computer.

5. On the Main menu of the screener, press the **UP** control panel button.

    The wireless menu appears.

6. Press the **LEFT** or **RIGHT** control panel button to begin data or name transfers.

User interface

The data manager user interface enables viewing, archiving, and reporting OAE data saved in the screener. With both USB and wireless connections, the screener can transfer OAE data to the data manager running on a computer. The data manager also can generate patient names and transfer the names to the screener.

The main window contains the following elements:
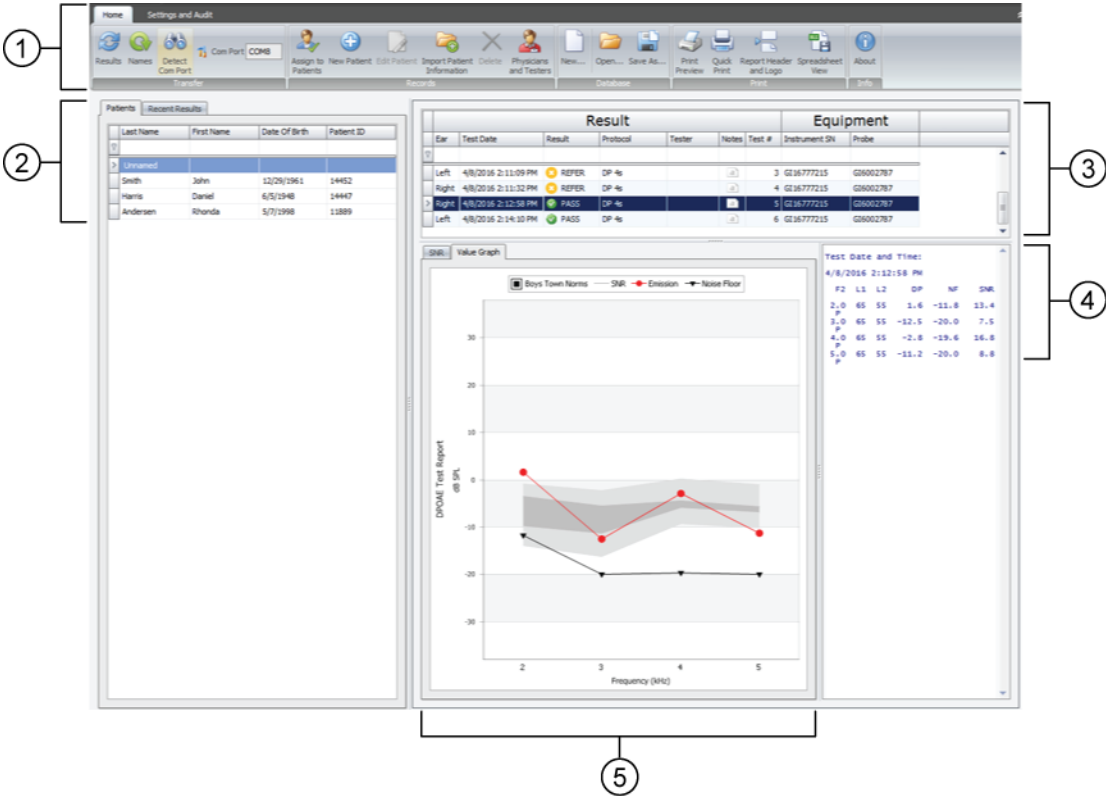
Item	Element
1	Ribbon bar
	Home tab with 5 sections of controls
	Settings and Audit tab with 2 sections of controls

| Item	Element
2	Patients and Recent Results pane
	Patients tab
	Recent Results tab
3	Results and Equipment summary pane
4	Numeric results section
5	Graphic results section
	Value Graph tab
	SNR tab

Ribbon bar elements

The ribbon bar at the top of the window has two tabs:

- Home
- Settings and Audit

Home tab

The majority of functions, such as viewing test data, adding patients, and transferring patient names are accessible from the Home tab. The Home tab has five sections:
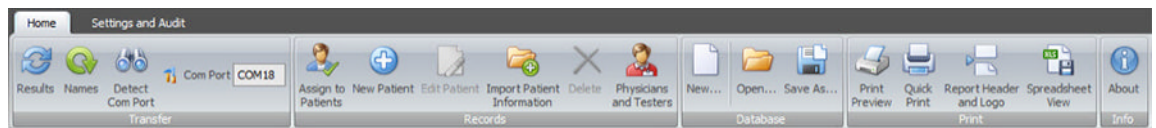
- Transfer
- Records
- Database
- Print
- Info

Transfer section

The Transfer section contains four items:
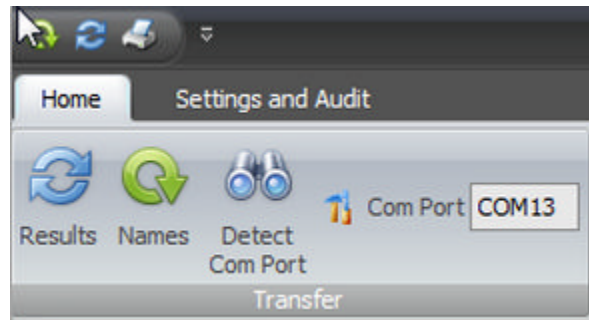
- Results
- Names
- Detect Com Port
- Com Port number

Records section

The Records section contains six items:
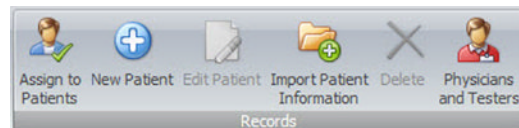
- Assign to Patients
- New Patient
- Edit Patient
- Import Patient Information
  - New patient demographic information may be imported from a spreadsheet in *.xlsx, *.xls or *.csv format.
- Delete
- Physicians and Testers

Database section

The Database section contains three elements:
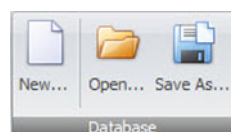
- New
- Open
- Save As

Print section

The Print section on the Home tab contains four options:
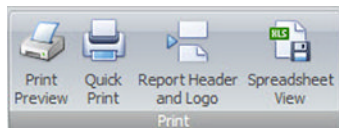
- Print Preview
- Quick Print
- Report Header and Logo
- Spreadsheet View

Print Preview

Print Preview includes several functions:

- Document
  - Open
  - Save
- Print
  - Print
  - Quick Print
- Page Setup
  - Scale
  - Size
- Zoom
  - Pointer
  - Zoom Out
  - Zoom (by percentage)
  - Zoom In
- Export
- Close

Quick Print

Selecting Quick Print enables you to bypass Print Preview and print directly to your default printer.

Report Header and Logo

The Report Header and Logo function enables you to set up a custom header and logo for your printed report. The header may include your clinic or hospital name and address, as well as your facility's logo.

Spreadsheet view

The Spreadsheet View allows you to view patient data in Excel format. The Test Results tab displays all results from the patient record fields. The Statistics tab displays the percent of Pass, Refer and Other test results by tester. The spreadsheet can be saved to have full Excel functionality.

Data manager information

View data manager information on the Home tab in the Info section.

The About Welch Allyn Data Manager window displays the following:

• the software version

• the database location

• the log file location

• an About Boys Town Norms button which links to more information

Settings and Audit tab

The Settings and Audit tab enables you to control the appearance of information on the screener, including the language, and to also track specific changes made to test results stored on the screener. The Settings and Audit tab has two sections:

• Settings
   ◦ Patient Identifiers
   ◦ Language
• Audit
   ◦ Ear Changes
   ◦ Test Changes

Patient identifiers

The Patient Identifiers feature determines the two fields you view on the screener when you use the Names transfer function. The default setting for the first field is Last Name; the default setting for the second field is First Name. You can select alternatives for one or both by clicking **Patient Identifiers**.

Language

The Language feature enables you to select the language displayed on the data manager the next time you open it. The default language is English (US).

The Data Manager may be displayed in a different language by selecting the desired language from the drop down menu. Language changes will occur the next time the Data Manager is opened. Some text strings are displayed in English only.

Audit functions

The Audit feature enables you to review test records that changed the ear originally identified with a test result or the patient name assigned to a test result.

Patients and Recent Results pane

Patients tab

The Patients tab displays a cumulative list of all patient information that has been transferred to the database manager. If a patient name was not created in the data manager prior to testing, the test results for the patient are tranferred and listed under the Last Name "Unnamed." See "Assign to patients" for instructions on how to transfer Unnamed results to a specific patient.

Recent Results tab

The Recent Results tab, which is set up just like the Patients tab, displays a list of all patients and tests that were most recently transferred from the screener to the database manager. You can search by patient last name or ID number to find records.

Result and Equipment summary pane

The Result section displays a cumulative list of test results for a specific patient. This information appears when a patient is selected in the Patients tab.

The Equipment section includes the screener and probe serial numbers used to conduct the screening. It also includes the software version number.

Numeric results section

The numeric results section displays complete test information for a specific test that includes F2 frequencies, L1 and L2, DP, NF, SNR, and outcome.

Graphic results section

The Graphic results section displays results of selected tests in graphical form.

The Graphic results section consists of two tabs:
- Value Graph
- SNR

Value Graph

The Value Graph tab displays OAE test data in a line graph format showing response amplitude in dB SPL of the emission and noise floor (NF) across the test frequency range. Ear data is color and symbol coded: red circles represent the right ear, blue X's represent the left ear. For the default screening bar graphs, green bars represent PASS and orange bars represent REFER. A box near the top of the graph controls the display of Boys Town Norms.
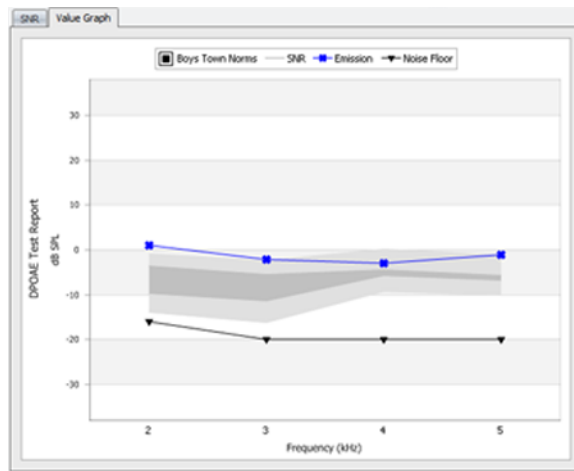
SNR Graph

The SNR tab displays the signal-to-noise ratio of each test frequency in a bar graph format.
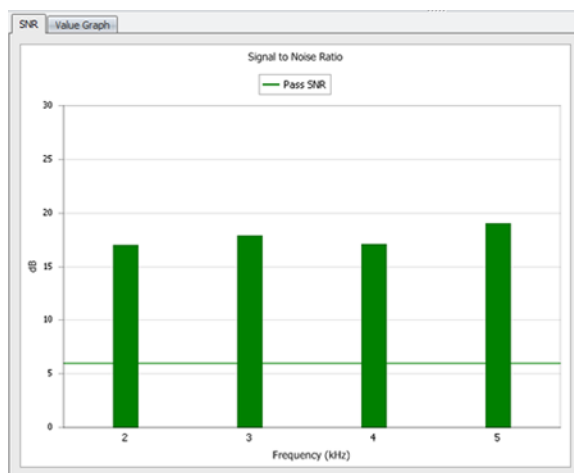
Using the data manager

Typical use cases—Data Manager

When you use the OAE Hearing Screener with the OAE Data Manager, your workflow follows one of two patterns or use cases:

Use case 1: Transfer patient names to the screener and data to the data manager

1. Transfer patient names to the screener at the start of the day
2. Test patients
3. Transfer data to the data manager database
4. Review and print test results

Use case 2: Test patients, transfer data to the data manager, and assign results to patient records

1. Test patients using the "250 Test" mode to automatically number each test
2. Manually record test number, patient name, and ear tested for each test
3. Transfer data to the data manager database
4. Assign unnamed, numbered test results to the appropriate patient records in the data manager
5. Review, annotate, and print test results

Follow the instructions presented in this section for the steps that apply to your use case.

Select a language

1. On the Settings and Audit tab, click the **Language** field.

   The dropdown menu reveals the available languages.

2. Select the desired language from the dropdown menu.

   The selected language appears in the Language field, and a confirmation dialog tells you that the new language will be in effect when you restart the data manager.

3. Click **OK** to close the dialog.

   The next time you launch the data manager, it will display the language you selected.

Set patient identifiers

1. On the Settings and Audit tab, click **Patient Identifiers**.

   The Set Patient Identifiers window appears revealing four identifier options in each pane: Last Name, First Name, Patient ID, and Date of Birth.

2. In the First Identifier section, select the field you wish to see in the screener. The First Identifier must be a unique identifier for the patient.

3. In the Second Identifier box, select the field you wish to see in the screener.

4. Click **OK**.

The screener uses two fields to identify the patient. Both fields are visible on the screener during the scrolling function to select a patient. After you select a patient by pressing the top control panel button, only the first field remains visible to identify the patient during testing.

Using the transfer function

Detect the Com Port

1. Turn on the screener and connect the screener to the computer using a wireless connection or the micro-USB connector.

2. Click **Detect Com Port** when the screener is connected for the first time or when connecting to a different screener device.

Transfer patient names to the screener

1. Power on the screener.

2. Connect the screener to a computer using a wireless connection or the micro-USB connector.

   The data manager defaults to the previously used Com Port number and automatically detects the screener on that port. The message "Waiting on PC" appears on the screen. See "Detect Com Port" if you are connecting the screener to the computer for the first time.

3. On the Home tab, click the **Names** icon.

   The Store Names to Instrument window appears.

4. If necessary, click **Clear List** to clear previously transferred patient names, and then immediately press the UP control panel button on the screener to display the wireless menu for data transfer.

5. Press the LEFT or RIGHT control panel button on the screener to transfer data.

6. If desired, click **Clear Instrument** to delete all patient names and test records on the screener.

   The patient names will be displayed on the device in alphabetical order.
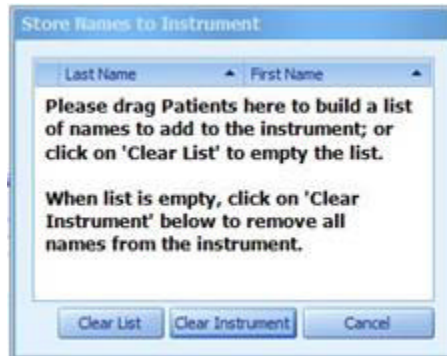
7. Drag patient names from the **Patients list** to the **Store Names to Instrument** screen to build the screener list.

8. To transfer patient names to the screener, click **Store Names**, and then immediately press the UP control panel button on the screener to display the wireless menu for data transfer.

   The names are transferred from the database to the screener.

9. Press the LEFT or RIGHT control panel button on the screener to transfer data.

Transfer results from the screener to the data manager

1. Connect a computer to the screener by plugging the USB cable connector into an available USB port on the computer and the micro-USB cable connector into the port at the base of the screener.

   The screener displays the message, "Waiting for PC," detects the connection to the computer, and waits for an action or communication from the data manager.

2. If a connection is not detected, click **Detect Com Port** to establish the Com Port connection.

3. Click the **Results** icon to transfer test results.

4. When all data has been transferred, click **OK**.

5. Navigate to the Recent Results tab, and then click the **Unnamed** row to view all transferred tests for unnamed patients.

6. On the Records section of the Home tab, click **New Patient** to add patient names and demographic information for the unnamed patient(s) tested.

7. On the Records section of the Home tab, click **Assign to Patients**, and then drag all unnamed test results on the left side of the window to the appropriate patient name on the right side of the window.

8. Click **OK**.

Use a wireless connection to transfer results from the screener to the data manager

1. Connect a computer to the screener by pairing the screener with the computer.

    The screener displays the message, "Waiting for PC," detects the connection to the computer, and waits for an action or communication from the data manager.

2. If a connection is not detected, click **Detect Com Port** to establish the Com Port connection.

3. Click the **Results** icon on the data manager, and then immediately press the UP control panel button on the screener to display the wireless menu for data transfer.

4. Press the LEFT or RIGHT control panel button on the screener to transfer data.

5. When all data has been transferred, click **OK**.

6. Navigate to the Recent Results tab, and then click the **Unnamed** row to view all transferred tests for unnamed patients.

7. On the Records section of the Home tab, click **New Patient** to add patient names and demographic information for the unnamed patient(s) tested.

8. On the Records section of the Home tab, click **Assign to Patients**, and then drag all unnamed test results on the left side of the window to the appropriate patient name on the right side of the window.

9. Click **OK**.

Viewing patient results

Select a patient

Click the Patients tab, and then click the row in which your patient's name appears.

Test results for that patient appear in the Result and Equipment summary pane of the main window. When you select a specific test result in the Result section, the test result detail appears in the Numeric and Graph sections of the main window. Highlighting distinguishes your selections from the surrounding details.

Search patient records using Auto Filter

At the top of the patient list on the Patients tab, there is a blank row. Use this row to search for specific patients.

1. Enter the **Last Name**, **Date of Birth**, or **Patient ID** in the respective blank field, and then press **Enter** on your keyboard.

    All patient names that meet the criteria appear.

2. Click **x** at the bottom left-hand corner to close the dialog box and return to the full patient name list.

Sort the patients list

1. Click the **Patients** tab, and then click the column header by which you want to sort the list.

    If sorting by Last Name, the list appears from A-Z. If sorting by Date of Birth, the list appears with the earliest birth year first. If sorting by Patient ID, the list appears numerically with the smallest number first.

2. Click the desired column again to reverse the sort order.

Sort the Result section

The Result section can be sorted by Test #, Ear, Test Date, Avg Time, Outcome, Protocol, Test Type, Tester, and Notes.

1. Click the column header by which you want to sort the list.

    The test results appear in the order determined by the column chosen for the sort.

2. Click the desired column again to reverse the sort order.

Search patient names using Auto Filter

There is a blank row at the top of the Result section. Use this row to search for specific result attributes.

1. Enter a parameter in your chosen column, and then press **Enter**.

    All tests that meet the criteria for that column appear.

2. Click the "x" at the bottom left-hand corner to close the dialog box and return to the full test results.

Display in spreadsheet view

On the Home tab in the Print section, click **Spreadsheet View** to access the data in an Excel format.

View Value Graph details

The Value Graph tab displays OAE test data in a line graph format showing response amplitude in dB SPL of the emission and noise floor (NF) across the test frequency range. Ear data is color and symbol coded: red circles represent the right ear, blue X's represent the left ear. For the default screening bar graphs, green bars represents PASS and orange bars represent REFER.

Move your mouse over an individual data point to view details at a given frequency.

The enlarged circles and triangle symbols designate the selected responses.
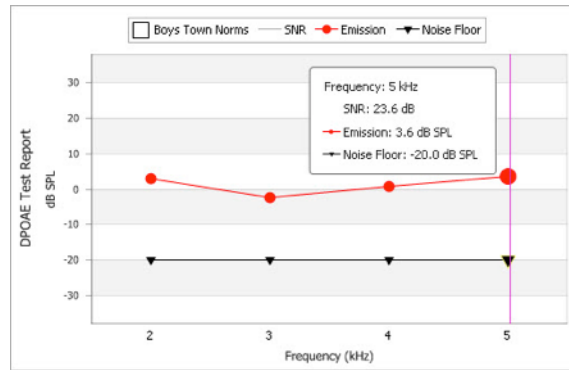
View Boys Town norms

1. View Boys Town Norms by clicking the Boys Town Norms box in the graphic display.
2. Hide the Boys Town Norms by clicking the Boys Town Norms box a second time.

    Find more information on the Boys Town Norms on the Home tab in the About box.

View SNR graph details

The SNR tab displays the signal-to-noise ratio in a bar graph format of each test frequency.

Move your mouse over an individual data point to view details at a given frequency.
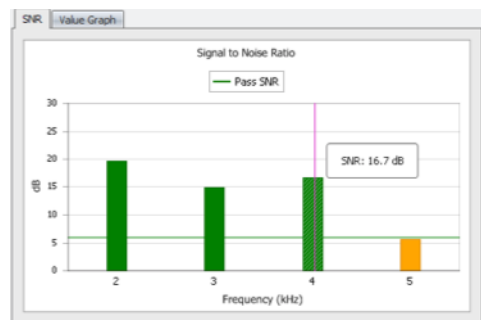
Open a document

Use this control to open previously saved test results.

1. On the Home tab in the Print section, click **Print Preview**.

    The Print Preview window opens.
2. Click **Open**.

    The Open dialog appears.
3. Navigate to the directory location of the desired test results document.
4. Double-click the document name.

    The test results document opens in the data manager.

Open a database

1. On the Home tab In the Database section, click **Open.**

   The computer directory appears.

2. Navigate to the desired database, and then click **Open.**

   A dialog box appears indicating that the new screener database will be in use the next time the data manager is opened. The previous database will be saved in its original location. The data manager will automatically close.

3. Reopen the data manager to view the selected database.

Managing patient and clinician data

Assign unnamed tests to patients

Assign unnamed tests to patient names using the steps below. Transferred test results are listed as "Unnamed" if patient names are not transferred to the screener prior to testing.

1. Add new patient names to database (see **Add new patient**).

2. Click **Assign to Patients**.

3. Drag the unnamed test results from the list on the left to the selected patient name on the right. For mulitple test results, hold down the **Ctrl key** while selecting the test results.
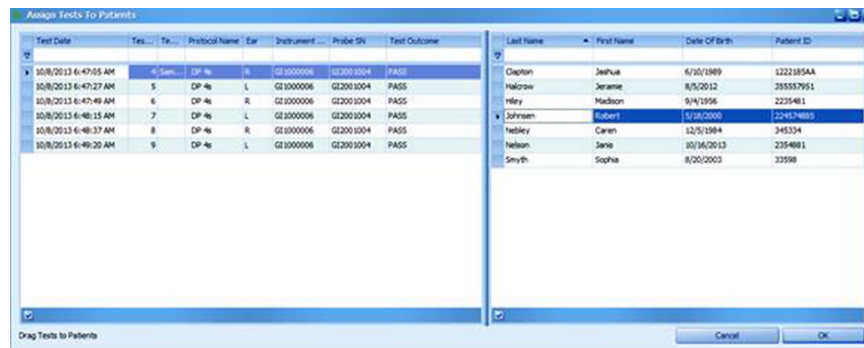
A confirmation window appears with the patient name and number of tests to be transferred.

4. Click **OK** if the information is correct.

5. Click **OK** when you have completed your transfers.

Add a new patient

1. On the Home tab in the Records section, click **New Patient**.

   The New Patient Information screen appears.

2. Enter patient demographics.

3. Enter patient-specific history.

4. Click **OK.**

   The new patient is added to the database.

Edit a patient record

1. From the Patients tab, select a patient name.

2. Click **Edit Patient**.

   The patient record appears.

3. Add or correct patient information.

4. Click **OK.**

Import patient information

New patient demographic information may be imported from a spreadsheet in *.xlsx, *.xls or *.csv format.

1. Click the **Import Patient Information** icon.

   The "Choose file containing patient to import" window opens.

2. Locate the spreadsheet file that contains the patient information and then click **Open**.

3. Review the matched list that compares the available data manager field names and the spreadsheet headers. Headers in green do not match any of the available field names. In the example below, Age, First, ID and Last do not match any of the Database Field Names.
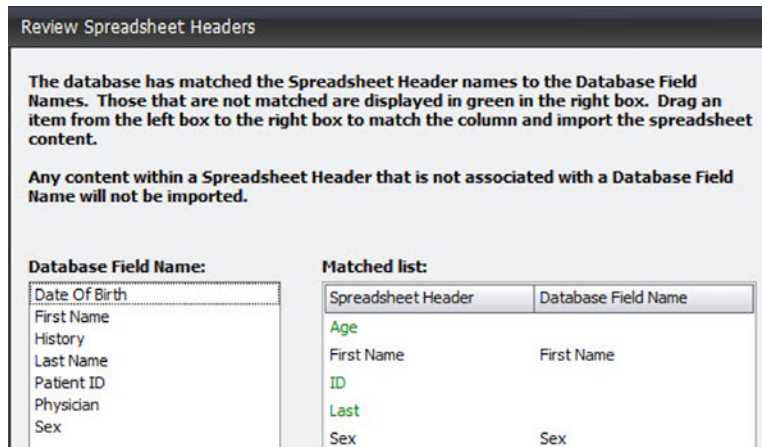
4. Drag and drop the appropriate data base field name to the appropriate/matched spreadsheet header. The header will display in black and the Database Field Name will appear when matched. In the example below, 'First' has been matched to First Name, 'ID' has been matched to Patient ID and 'Last' has been matched to Last Name. 'Age' is not matched in this example and remains green.
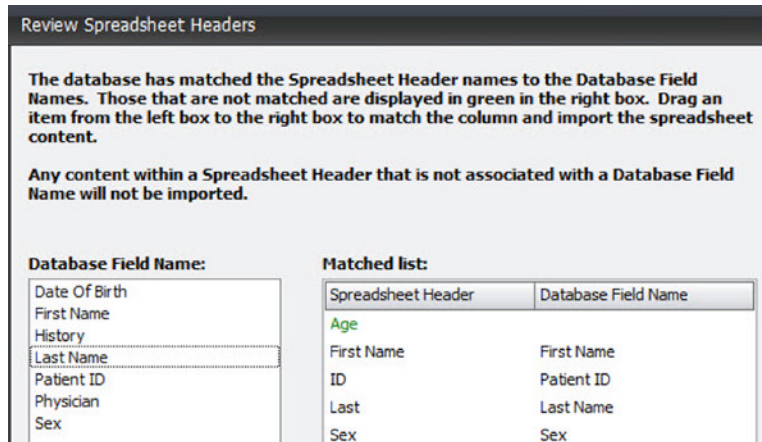
5. After all of the selected fields are matched, click **OK** to begin the import.

6. If any fields are not matched, a message appears prompting you to click **OK** to ignore the unmatched fields and import without this data as shown. Click **Cancel** to stop the import.
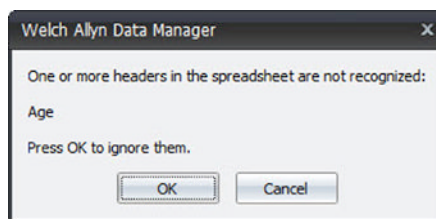
7. A confirmation of the number of patient names to be imported appears as shown. Click **Yes** to complete the import. Click **No** to stop the import.
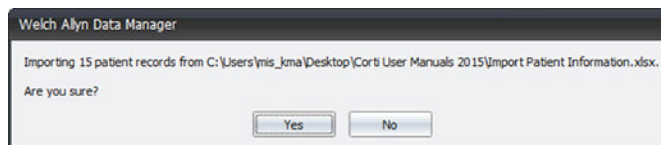
Newly imported patient names will appear at the bottom of the Patients tab.

Delete a patient name or test

1. From the Patients tab, select the patient name or specific test to be deleted.

2. Click **Delete.**

    A warning window appears with the specific patient name or test to be deleted.

3. Click **Yes** to permanently delete the patient name and test results from the database.

4. Click **No** to cancel the delete action.

Add physician and tester names

You can build a list of referring physicians and testers that can be assigned to patient records in the New Patient function of the Records section.

1. Click the **Home** tab, and then in the Records section, click **Physicians and Testers**.

The Physicians and Testers screen appears.

2. At the bottom of the screen, click **+** under the Physician Info column to add a doctor to the physician list, or click **+** under the Tester Name column to add a tester name.

3. Enter the name as you want it to appear in the database and on the report.

4. Click **OK.**

Use the Audit functions

The Audit section includes two items:
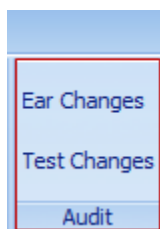
- Ear Changes
- Test Changes

1. On the Settings and Audit tab in the Audit section, click **Ear Changes** to review test records that had the Test Ear changed.

2. On the Settings and Audit tab in the Audit section, click **Test Changes** to review patient-specific test results that have been re-assigned from one patient name to another.

Saving and printing options

Create a Report Header and Logo

1. On the Home tab in the Print section, click **Report Header and Logo**.

The Test Report Header Options dialog box appears.
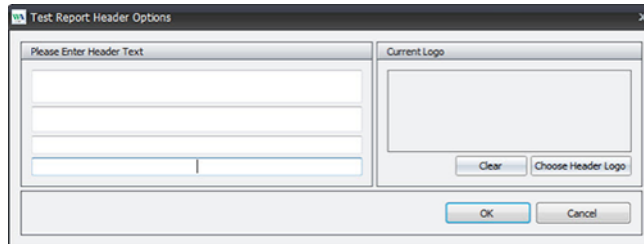
2. In the left pane, enter information for your organization, such as name, address, clinician, and the like.

3. In the right pane, click **Choose Header Logo**.

4. Select the logo file and then click **Open**.

   The logo appears in the Current Logo window.

5. Click **OK**.

   The Report Header and Logo will appear on all printed reports.

Create a new screener database

1. On the Home tab In the Database section, click **New**.

2. Name and save the new database file in the computer directory location of your choice.

3. Click **OK.**

   A dialog box appears indicating that the new screener database will be used the next time the data manager is opened.

4. Click **OK.**

   The previous database is automatically archived and closed. The data manager closes automatically.

5. Launch the data manager to view the new database.

   The new data base is empty and ready for data transfer.

Save a database

Create a naming convention for your database files that is easy to remember and use. This will assist you in efficiently locating patient records. The default database name is WA_patient.mdb and is located at (C:) Users > XXX. We recommend that you Save and rename the default database to the desired location on your computer.

1. On the Home tab, in the Database section, click **Save As**.

2. Navigate to the computer directory location of your choice, and then name the database file.

   A confirmation message appears.

3. Click **OK**.

   The database file is saved to the computer directory location.

Save a report

Use this control to save test results.

Note   Create a naming convention for your database files that is easy to
                remember and use. This will assist you in efficiently locating patient
                records.

1. On the Home tab with the test report displayed, click **Print Preview**.

    The Print Preview window opens.

2. Click **Save**.

    The Save As dialog appears.

3. Navigate to your desired directory location, and then name the report.

    A confirmation message appears.

4. Click **OK**.

    The report is saved to your desired location.

Quick Print

1. Click the **Patients** record to be printed in the Patients tab.
2. Click **Quick Print** to print all tests performed on the patient.
3. To print selected results, select the tests you want to print in the patient results list.
4. Click **Quick Print** to print the selected test to your default printer.

Review and print all results for a patient

Use the print function to print all saved patient records from the Print Preview window.

1. Click the **Patients** tab, and then select the patient name.

    The patient test results appear in the Result window.

2. On the Home tab in the Print section, click **Print Preview**.

    The Print Preview tab opens.

3. Review the report. If the data is what you want, choose one of these options:
    *   Click **Print** to select a printer, adjust the number of copies, and/or modify other
        printing options in the Print dialog. After making your selections, click **Print**.
    *   Click **Quick Print** to print immediately to your default printer (no changes to
        default setup).

    The data manager sends the print job to the selected printer.

Review, annotate, and print selected test reports for a patient

Use Notes and the print function to annotate and print a subset of saved patient records
from the Print Preview window.

1. Click the **Patients** tab, and then select the patient name.

    The patient test results appear in the Result window.

2. In the Result pane, select the test result you want to review/annotate and click on the lower case "a" icon in the Notes column.

   A Note window opens.

3. Enter your note and click OK.

   The lower case "a" becomes an upper case "A" when the Note window closes.

4. Repeat steps 2 and 3 for all test records you want to annotate.

   All notes entered appear in printed reports.

5. Select the test result(s) you want to print. To select multiple records, hold down the Ctrl key as you select each record.

6. On the Home tab in the Print section, click **Print Preview**.

   The Print Preview window opens.

7. Review the report. If the data is what you want, choose one of these options:
   - Click **Print** to select a printer, adjust the number of copies, and/or modify other printing options in the Print dialog. After making your selections, click **Print**.
   - Click **Quick Print** to print immediately to your default printer (no changes to default setup).

   The data manager sends the print job to the selected printer.

Scale a document

Use the scale function to stretch or shrink the printed output to a percentage of its default size.

1. Click the **Patients** tab, and then select the patient name.

   The patient test results appear in the Result window.

2. On the Home tab in the Print section, click **Print Preview**.

   The Print Preview window opens.

3. In the Page Setup section, click **Scale**.
   - To scale by percentage, select **Adjust to**, enter the desired percentage, then click **OK**.
   - To scale by page width, select **Fit to**, enter the target page width, then click **OK**.

   The scaled output appears onscreen.

4. Review the scaled output and adjust as needed. When the data is scaled as you want, choose one of these options:
   - Click **Print** to select a printer, adjust the number of copies, and/or modify other printing options in the Print dialog. After making your selections, click **Print**.
   - Click **Quick Print** to print immediately to your default printer (no changes to default setup).

   The data manager sends the print job to the selected printer.

Choose the paper size for printing

Use the size function to select the paper size for your printed test report.

1. Click the **Patients** tab, and then select the patient name.

The patient test results appear in the Result window.

2. On the Home tab in the Print section, click **Print Preview**.

The Print Preview window opens.

3. In the Page Setup section, click **Size**, and then select a paper size for the printed test report.

4. Review the output/page size and adjust as needed. When the data and page size are as you want, choose one of these options:

   • Click **Print** to select a printer, adjust the number of copies, and/or modify other printing options in the Print dialog. After making your selections, click **Print**.

   • Click **Quick Print** to print immediately to your default printer (no changes to default setup).

The data manager sends the print job to the selected printer.

Use the Zoom feature

Use the zoom controls to enlarge, shrink, and manipulate your view of test reports onscreen.

1. Click the **Patients** tab, and then select the patient name.

The patient test results appear in the Result window.

2. On the Home tab in the Print section, click **Print Preview**.

The Print Preview window opens.

3. In the Zoom section, choose the options below to adjust the display of test results:

   • To shrink the report...

     ○ Click **Zoom Out** until the report is the desired size

     ○ Click **Zoom** and then select the desired page view or select the desired percentage

   • To enlarge the report...

     ○ Click **Zoom In** until the report is the desired size

     ○ Click **Zoom** and then select the desired page view or select the desired percentage

   • To alternate between 100% view and full-page view...

     ○ Click the magnifier tool. The mouse pointer becomes a magnifying glass when you hover over the test report.

     ○ Click the magnifier on report once to display the full-page view.

     ○ Click the magnifier on the report again to display the 100% view.

   • To manually scroll through pages...

     ○ Click the hand tool. The mouse pointer becomes a hand when you hover over the test report.

     ○ Click and hold the hand tool on your report (the open hand becomes a fist) and then drag the page view up or down as desired.

   • To restore the mouse pointer, click on the arrow.

Export test results in electronic formats

Use the export function to save the test report in a preferred digital format.

1. Click the **Patients** tab, and then select the patient name.

    The patient test results appear in the Result window.

2. On the Home tab in the Print section, click **Print Preview**.

    The Print Preview window opens.

3. In the Export section, click **Export To**, and then select an export format (PDF File, RTF File, or Image File).

    Note   Each of these options opens a dialog with additional formatting and export options.

4. Complete the more specific export option selections in the dialog and click **OK**.

    The Save As dialog appears.

5. Navigate to your desired directory location, and then name the report.

    A confirmation message appears.

6. Click **OK**.

    The report is saved to your desired location.

Customizing the display

When you install the data manager, columns and data windows adjust to best fit the resolution of your computer screen. You may add, delete, or move columns of data in the Patients pane and also in the Result and Equipment pane to customize the data manager view. The specific window or pane determines what columns you may add.
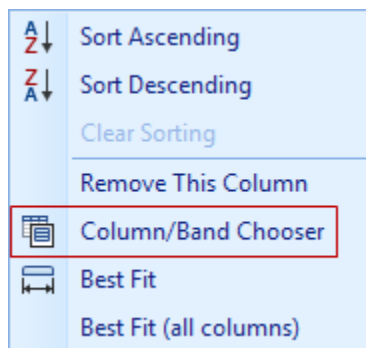
You may also resize the Patients and the Result and Equipment panes. The most recent customizations to the data manager display remain in effect the next time you open the data manager.

Move columns

Click and drag the column header to the desired location.

Add columns

1. Right-click in the header column, and then select **Column/Band Chooser**.

The Customization window appears.

2. Double-click or drag the column of data you want to add from the Customization window to the desired location in the Patients tab or Result section.

3. Click **x** at the bottom-left of the window to close the Customization window.

The new column appears in the main window. Adding multiple columns of data will alter the main window view.

Remove columns

There are two methods available to remove columns.

1. Right-click in the header column you want to remove, and then select **Remove This Column**.

2. Right-click in the header column you want to remove and drag the column to the **Column/Band Chooser**.

Change the size of a window

Click and drag the dark blue borders of the window to the desired position.

The Value Graph key (symbols for SNR, Emission and Noise Floor) will move into the data if the window is sized too small.

Remove sections

Sometimes it is necessary to remove an entire section (band) of fields, such as the Equipment band.

Right-click and drag the band title to the Bands tab in the Customization window.

Auto Print

Auto Print user interface

Auto Print is a PC-based printing tool which allows you to bypass the data management functionality of the Data Manager while maintaining the ability to print OAE test results. Auto Print is designed to be used instead of Data Manager. After you install Auto Print software and select the desired printer type and settings, the software remains open on the PC. Auto Print continually scans the USB ports so that when the screener is connected to the PC, the PC automatically detects it, the screener transfers data for reporting purposes, and the report prints to the designated printer.

Note   If you require full database functionality or detailed reporting capabilities, such as medical history or referring physician, you should install Data Manager.

Note   You must install the desired printer on your PC before you set up Auto Print. PDF and default printer reports are similar to the reports generated by Data Manager.

The ribbon bar at the top of the window has two tabs:

- Home
- Settings

Home tab

The Home tab supports selection of the desired printer type for screener reports and provides controls to view PDFs as well as Auto Print information. Printer type selections on the Home tab affect the options available in the Settings tab. For example, PDF-related options only appear when you select Print to PDF.

Selecting the printer type for screener reports is the first step in Auto Print. All available print settings will be dependent on this selection. The selected printer must be installed on the PC prior to setting up Auto Print.

The Home tab has three sections:
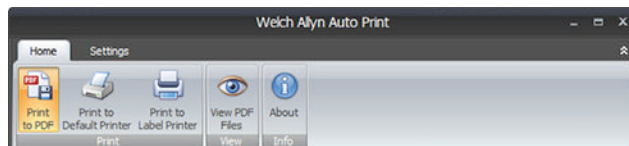
- Print

- ○   Print to PDF: Selects PDF as the default printer type for Auto Print.
- ○   Print to Default Printer: Selects any installed PC printer for Auto Print.
- ○   Print to Label Printer: Selects a PC-based label printer for Auto Print.
- •   View
  - ○   View PDF Files: Allows for quick access to the PDF Export Folder where printed PDF reports are saved. This selection is only available if Print To PDF is the selected printer.
- •   Info
  - ○   About: Provides software version number, PDF file location if applicable, log file location, and access to About Boys Town Norms.

Settings tab

The Settings tab supports the selection of settings that affect the printed results. For example, if Boys Town Norms is selected, the normative shaded area will appear on the Value Graph of printed DPOAE results. All available print settings depend on printer type selections made on the Home tab.

The Settings tab has the following options:
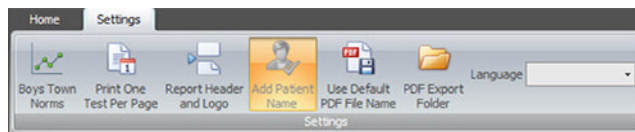
- •   Boys Town Norms: Normative data appears on the DPOAE Value Graph style for all printer types. The values used to create the template are shown in Table A1 from Gorga, M.P., Neely, S.T., Ohlrich, B., Hoover, B., Redner, J. and Peters, J. (1997). "From laboratory to clinic: a large scale study of distortion product otoacoustic emissions in ears with normal hearing and ears with hearing loss." Ear & Hearing, 18, 440-455.

- •   Print One Test Per Page: When selected, only one OAE test result prints per page. This setting is on by default if the Print to Label Printer is selected.

- •   Report Header and Logo: For PDF and default printers, facility address and/or logo may be printed on each test page. This setting is not available for label printers.

  Note   Entering header and logo information enables this setting.

- •   Add Patient Name: This setting allows the user to enter one patient name regardless of the number of tests printed. Add Patient Name applies to all printer types. This setting is on by default with Print to PDF.

- •   Use Default PDF File Name: When selected, PDF file names are generated automatically based on the patient name (if entered), screener serial number, and test date and time. Reports are saved to the designated PDF Export folder with no other action required. When NOT selected, a directory appears so that PDF file name and default directory can be modified each time you print results.

- •   PDF Export Folder: Allows the user to designate or change the location on the PC of printed PDF reports. This option is selected by default when View PDF Files is selected in the Home Tab.

- •   Language: Use this option to select the desired language from the drop down menu. Language changes occur after closing and re-opening Auto Print. Some text strings are displayed in English only.

Note   Some settings are on by default depending on the selected printer. For
                  example, if Print to Label Printer is selected, Print One Test Per Page are
                  on by default.

Save 250 versus L/R mode

Auto Print allows you to enter one patient name to all printed reports. If the screener is
set to L/R Mode, the entered patient name corresponds to the patient tested. If the
screener is set to Save 250 and you enter a patient name, all printed reports contain the
same patient name. If all tests performed on a single patient require printing (rather than
the last left test and last right test), then setting the screener to SAVE 250 is
recommended. It is possible to bypass Add Patient Name by clicking **OK** when prompted
to add a name.

Set up the printer

Before using Auto Print for the first time, you must install the target printer on your
PC. To use the Print to PDF option, you must install a PDF reader.

Note   Your printer must be connected to your PC through a wired
                  network or local connection. Printing with a wireless
                  connection is not an option for Auto Print.

Using Auto Print

Typical use case—Auto Print PDF reports

The use case described here require that you first set up Auto Print and set the OAE
Hearing Screener to L/R mode. Follow the instructions presented later in this section as
well as in the OAE Hearing Screener *Directions for use* to ensure the Auto Print
functions properly.

1. Complete left and right ear OAE testing on the patient.
2. Connect the screener to the PC
3. When prompted, enter the patient's name for the report and click **OK**. The PDF
    report automatically prints to the PDF Export Folder.
4. Go to **Home Tab** > **View PDF Files** to view the electronic report.
5. Attach the report to the patient's electronic medical record.

Follow the instructions presented in this section for the steps that apply to your use
case.

Print to PDF

1. Launch the Auto Print software.

2. Select **Print to PDF** on the Home Tab.

3. On the Settings tab, select **PDF Export Folder** to enter the designated location on
    the PC for the PDF reports.

    Note   This action is required the first time you set up Auto Print or
                      when you change the location on the PC.

4. On the Settings Tab, select the desired report settings for Boys Town Norms, Print One Test Per Page, and/or Use Default PDF File Name. Add Patient Name is on by default.

5. Select and enter report Header and Logo, if desired.

6. When selections are complete, minimize the Auto Print window and perform a test print.

7. Turn on the screener and ensure that at least one test is stored in memory.

8. Connect the screener to the PC directly or via the cradle.

    Auto Print will automatically detect the screener. No other action is required to connect.

    Note   "Waiting on PC" appears on the screener display when connected.

    A test transfer confirmation window appears temporarily and minimizes after 5 seconds. It is not necessary to close this window.

9. When prompted, enter the Patient Name that will appear on the report or click **OK** to print without a patient name.

    A second window appears to confirm printing. Auto Print prints all tests stored in the device.

10. To review the PDF report, go to **Home tab** > **View PDF Files**.

11. Review the printed report and modify report settings if needed.

Print to default printer setup

1. Launch the Auto Print software.

2. On the Home tab, select **Print to Default Printer**.

3. On the Settings tab, select the desired report settings for Boys Town Norms, Print One Test Per Page, and Add Patient Name.

4. Select and enter a report Header and Logo, if desired.

5. When selections are complete, minimize the Auto Print window and perform a test print.

Print to default printer

1. Turn on the screener and ensure that at least one test is stored in memory.

2. Connect the screener to the PC directly or via the cradle.

    Auto Print will automatically detect the screener. No other action is required to connect.

    Note   "Waiting on PC" appears on the screener display when connected.

    A test transfer confirmation window appears temporarily and minimizes after 5 seconds. It is not necessary to close this window.

3. When prompted, enter the Patient Name that will appear on the report or click **OK** to print without a patient name.

    A second window appears to confirm printing. Auto Print prints all tests stored in the device.

4. Review the printed report and modify report settings if needed.

Typical use case—Auto Print to label printer

Screener test results may be printed to sticky labels which can be placed in the patient's chart.

1. Complete left and right ear OAE testing on the patient.
2. Connect the screener to the PC.
3. When prompted, enter the patient's name for the report and click **OK**. Right ear and left ear test results will print on separate labels.
4. Go to **Home Tab** > **View PDF Files** to view the electronic report.
5. Place label in the patient's chart.

Follow the instructions presented in this section for the steps that apply to your use case.

Print to label printer setup

1. Launch the Auto Print software.

2. Select **Print to Label Printer** on the Home Tab.

3. Select the label printer from the printer dropdown menu and click **OK**.

4. On the Settings Tab, select the desired report settings for Boys Town Norms and/or Add Patient Name.

   Note   Boys Town Norms will print for DPOAE results if the screener display is set to Value Graph.

5. When selections are complete, minimize the Auto Print window and perform a test print.

Print to label printer

1. Turn on the screener and ensure that at least one test is stored in memory.

2. Connect the screener to the PC directly or via the cradle.

   Auto Print will automatically detect the screener. No other action is required to connect.

   Note   "Waiting on PC" appears on the screener display when connected.

   A test transfer confirmation window appears temporarily and minimizes after 5 seconds. It is not necessary to close this window.

3. When prompted, enter the Patient Name that will appear on the label or click **OK** to print without a patient name.

   A second window appears to confirm printing. Auto Print prints all tests stored in the device.

   Note   The label printout matches the screener display. If the screener is set to SNR Graph, then the SNR bar graph prints on the label. If the screener is set to Value Graph, the Value graph prints on the label.

   Note   All printed test results are marked for deletion on the screener but continue to be stored in memory until a new test begins. At that time, all tests in memory are erased. Storing the tests in memory allows for reprinting the tests if printing is unsuccessful (for example, the paper runs out before printing is complete).