

DSL/FONIX LINK

User's Guide

Software version 1.2
Revision 2



FRYE ELECTRONICS, INC.

P.O. Box 23391 • Tigard, OR 97281-3391 • USA

(503) 620-2722 • (800) 547-8209

Fax: (503) 639-0128

<http://www.frye.com> • e-mail: general@frye.com

Copyright ©1999 Frye Electronics, Inc. All rights reserved. Revised 5/00

Table of Contents

1.0 Introduction	1
1.1 A word about this manual	1
1.2 Software requirements	1
1.3 Hardware requirements	1
1.4 Requirements for your FONIX instrument	1
1.5 Installing the LINK	1
2.0 Learning the Basics of the Program	3
2.1 Setting up your instrument	3
2.2 LINK buttons and what they do	3
2.3 Using the configurations menu	4
2.4 Reading the status bar	5
2.5 DSL 4.1 basics	5
2.6 Opening a client file in the LINK	6
3.0 Using the Audiometer	7
4.0 Using an Analyzer	9
4.1 Mid-level testing.....	9
4.1.1 Running a coupler test for a linear aid.....	9
4.1.2 Running a real ear test for a linear aid.....	11
4.1.3 Running a coupler test for a WDRC aid	12
4.1.4 Running a real ear test for a WDRC aid	14
4.2 Hi-level testing	16
4.3 Measuring the RECD.....	17

1.0 Introduction

The DSL/FONIX LINK was developed to make it possible to use the University of Western Ontario's DSL 4.1 fitting system, in its entirety, with FONIX instruments. The LINK gathers data points directly from your FONIX instrument and loads them, all at once, into UWO's DSL 4.1 program. Basically, the LINK provides a way for your FONIX instruments to communicate with your DSL 4.1 program.

1.1 A Word About This Manual

This user guide is not meant to be read cover-to-cover. It can be, but it is laid out so that you can use the table of contents to quickly find instructions for what you are doing. Throughout this manual, we will refer to UWO's DSL 4.1 program as "DSL" or "DSL 4.1" and the FONIX DSL Link program as "LINK".

1.2 Software Requirements

To use the LINK, your computer needs to have Microsoft Windows 3.1, 95, or 98. It is recommended that you do not use the LINK with Windows NT, as the two are not fully compatible.

1.3 Hardware Requirements

Your computer should have at least 3.6 Megabytes of free hard disk space to run the LINK. You will also need a free serial port (RS232) on your computer in order to connect it to the instrument. If you are planning to use more than one FONIX instrument with the LINK—for example, the FA10 audiometer and the FP40 analyzer—you might find it convenient to purchase a switch for your computer's serial port.

1.4 Requirements for Your FONIX instrument

Your FONIX instrument must have the RS232 software and hardware installed.

1.5 Installing the LINK

The LINK comes to you on a set of two floppy disks, numbered 1 and 2. To install it on your computer...

1. Place disk 1 into your floppy drive.
2. Click on the Windows 'Start' menu, and select 'Run.'
3. Type 'A:\SETUP' into the space provided and click on 'OK.'
4. The Windows Installation Wizard will open and guide you the rest of the way.

2.0 Learning the Basics of the Program

2.1 Setting up Your Instrument

FA-10

To connect the FONIX FA10 audiometer to your computer, plug the 9-pin connector labeled 'RS232' into the RS232 interface on the back of the instrument. Then plug the 25-pin connector into com port 1 or 2 on the back of your computer. If the cable is not already in place, plug it into each of the connectors.

If your computer uses a 9-pin com port, use the 9-pin connector labeled 'computer.'

FP40 and FP40-D

To connect the FONIX FP40 or FP40-D to your computer, plug the 9-pin connector labeled 'RS232' into the RS232 interface on the back of the instrument. Then plug the 25-pin connector into com port 1 or 2 on the back of your computer. If the cable is not already in place, plug it into each of the connectors.

If your computer uses a 9-pin com port, use the 9-pin connector labeled 'computer.'

6500-CX

To connect the FONIX 6500-CX to your computer, determine which kind of RS232 interface your instrument uses. You may have only a 9-pin serial port, or you may have an additional 25-pin port, labeled 'RS232 computer interface.' If you have the 25-pin port, use the 25-pin connector labeled '6500.' If you have only the 9-pin port, use the 9-pin connector labeled 'RS232.' Once you have the connector in place on the instrument, finish the connection by plugging the 25-pin connector labeled 'computer' into com port 1 or 2 on your computer.

If your computer uses a 9-pin com port, use the 9-pin connector labeled 'computer.'

2.2 LINK Buttons and What They Do

Though you can control this program with the menus, nearly all of the functions have shortcut buttons, represented by icons located just below the menu bar. The shortcut buttons are shown below with a description of what they do.



This button will open the client menu.



This button will take you to the mid-level target verification screen.



This button will take you to the high-level target verification screen. This mode is often used to test the saturation response of an aid.



Use this button when you are measuring an audiogram.



This button will open the screen used for measuring the RECD (Real-ear to Coupler Difference) value

2.3 Using the Configurations Menu

The configurations menu is also of interest. Click on it to open the Configurations window (see Figure 2.3). You can do two things in this window. You can set the directory where your DSL 4.1 client files are stored, and you can choose the computer port that the LINK will use to communicate with the analyzer.



Figure 2.3

To set the default client directory, type in the location of the folder that your client records are stored in. This will normally be the directory containing DSL 4.1. For instance, typing 'c:\dsl41win' will make that folder the default.

To select a port, click on the button of the port you want. It is important that your analyzer be connected to the port you choose, otherwise your attempts to establish a connection will fail.

2.4 Reading the Status Bar

The status bar, at the bottom of your screen, gives you basic information. Look here to find the client folder that is in use, the connection status between the LINK and your instrument, the ear being tested, and the time.

The client name also appears at the top of the screen, along with the last audiometric test date (LATD) and the last verification test date (LVTD).

2.5 DSL 4.1 Basics

This section will provide you with some basic knowledge of the DSL 4.1 program. Please use the DSL 4.1 user manual for more information.

To navigate the DSL icons, click on them with your right mouse button. A message telling you about their function will appear in the line below them.

Begin in DSL by either creating a new client record or by opening an existing client record.

To create a new client record...

1. Click on the 'New Record' icon or choose 'New' in the file menu. A dialogue window will open asking if you want to save the client information. Choose 'Yes' or 'No,' as you prefer.
2. Fill in the client information fields.
3. Click on the 'Save Record' icon, or choose 'Save As' in the file menu.
4. Type in a file name. Retain the .dsl extension.
5. Click 'Save.'

To open an existing client record...

1. Click on the 'Open file' icon, or choose 'Open' in the file menu. Answer 'Yes' or 'No' to the dialogue window.
2. Highlight the record you want to open.
3. Click 'Open.'

Once you have a client record on the screen, you need to choose the factors that DSL will consider when calculating the client's target curve. Please see the DSL user manual for details on using these settings. It is important that you make an appropriate choice for the hearing aid circuit type (in the HA Fit menu) as it will affect the LINK. If you choose 'Linear,' then the mid-level target test in the LINK will do only one test at an average speech level. If you choose 'Wide Dynamic Compression Range' (WDRC), then the mid-level target test will do three tests, one each for soft, medium, and loud speech.

2.6 Opening a Client File in the LINK

Once you have a client file open in DSL, you may open it in the LINK. Opening a client file in the LINK does two things in addition to opening the file. First, it establishes a connection between DSL 4.1 and the LINK. Second, when you select a client file, the LINK searches for and recognizes the FONIX instrument with which it will communicate. It is important that your FONIX instrument be correctly connected to your computer (See section 2.1 for details on connecting the instruments). If you select a client file in the LINK and the instrument is not hooked up correctly, a time-out error will occur.

NOTE: If you switch the instrument that is communicating with the LINK, you must select a client file in order for the LINK to search for and recognize the new instrument. You have to do this step even if you are not switching clients.

To open a client file in the LINK, it must first be created in DSL 4.1. Client files cannot be created, changed, or deleted in the LINK. Once a client file has been saved to DSL 4.1, it may be opened in the LINK.

In the LINK, click on the 'Client' icon. A new window will open; see Figure 2.6

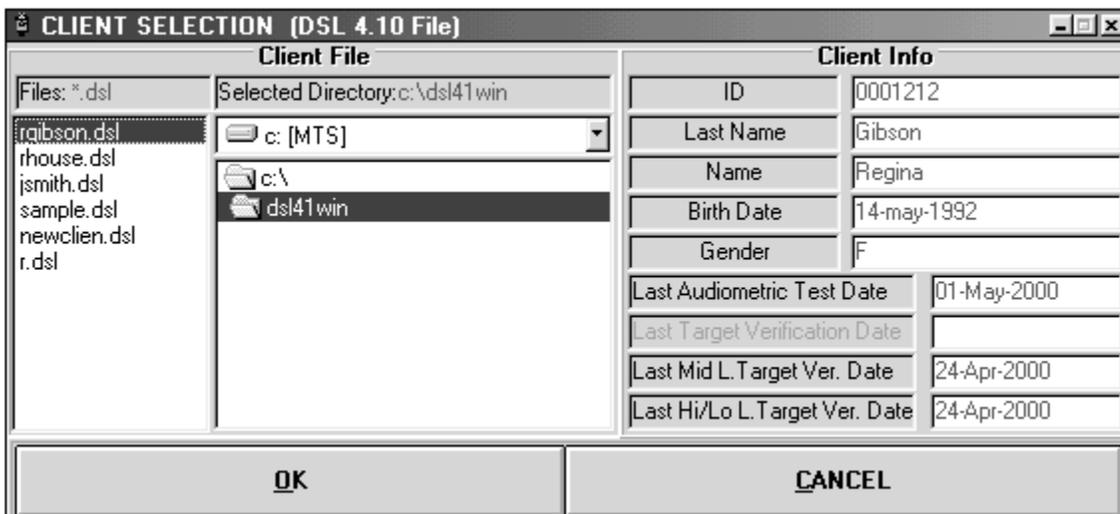


Figure 2.6

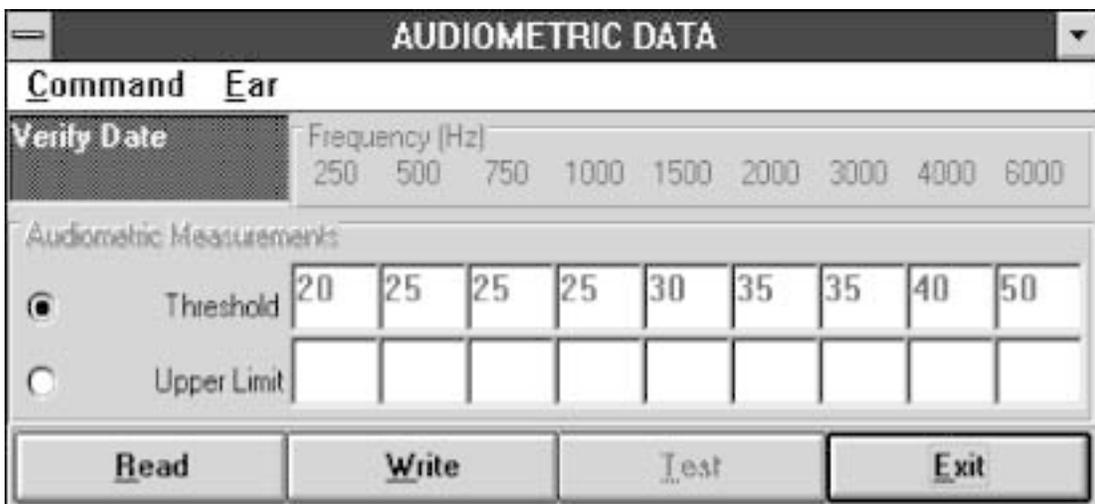
If you have not set the folder where your DSL client records are stored as your default, you need to open it. Do so by double clicking on it. (See section 2.3 for more on setting configurations.)

Highlight the client file you want to open and click 'OK.' The LINK will search for your FONIX instrument. If it successfully locates it, it will show the model name in the status bar at the bottom of the screen.

3.0 Using the Audiometer

The LINK records the client's audiogram as you take it, saving you from having to enter numbers into DSL by hand.

1. To use the FA10 with the LINK, first click on the audiogram icon. A new window will open. See Figure 3.0. Notice that the 'Test' button is disabled in this window. That is because the LINK continuously looks for audiometric data as you take the audiogram.



The screenshot shows a software window titled "AUDIOMETRIC DATA". It has a menu bar with "Command" and "Ear". Below the menu bar is a "Verify Date" field. A table of frequencies (250, 500, 750, 1000, 1500, 2000, 3000, 4000, 6000 Hz) is displayed. Under "Audiometric Measurements", there are two radio buttons: "Threshold" (selected) and "Upper Limit". The "Threshold" row has values: 20, 25, 25, 25, 30, 35, 35, 40, 50. The "Upper Limit" row is empty. At the bottom are four buttons: "Read", "Write", "Test" (disabled), and "Exit".

Verify Date	Frequency (Hz)	250	500	750	1000	1500	2000	3000	4000	6000
	Audiometric Measurements									
<input checked="" type="radio"/>	Threshold	20	25	25	25	30	35	35	40	50
<input type="radio"/>	Upper Limit									

Figure 3.0

2. Select which part of the audiogram you are going to run first, the threshold levels or the uncomfortable levels. Choose by clicking the button at the left of the desired selection.
3. Next, in the 'Ear' menu, select which ear you are going to test. Your choice in the LINK must match your choice on the audiometer.
4. Set the audiometer input to 'Tone' and the output to 'Phone.'
5. Measure the audiogram as you normally would. Each time the stimulus button is pressed for a specific frequency, the amplitude recorded in the LINK will be updated. Take care that the amplitude setting, when you press the stimulus button for the last time at any frequency, matches the client's threshold (or uncomfortable) level.

6. To save the values in the client's folder in the DSL program, press 'Write.'

NOTE: When you do this step a dialogue box will open, reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

7. Enter the DSL program and click on the Open file icon. Say 'No' when the program asks you to save. (If you do choose 'Yes,' the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don't panic. The data is still in the LINK; just go back to that program and try again.) Once in the client file window, choose the record for the client you are currently working with, and click on 'Open.'
8. Once the audiogram is stored in DSL, you may view it in the 'Assessment Data' screen.

4.0 Using an Analyzer

4.1 Mid-Level Testing

When running a mid-level test, you are typically trying to determine how the aid responds to normal speech levels. If the hearing aid uses a linear circuit, normally, you would use a source input of 65 or 70 dB, but the range of possible source inputs is between 45 and 90 dB in 5 dB intervals.

If you are testing a Wide Dynamic Range Compression (WDRC) Aid, it is more likely that you want to test a range of sounds: soft, medium, and loud speech levels. The LINK lets you run three separate curves on aids with this kind of circuitry.

With the LINK, you can remotely run four different types of mid-level tests on the hearing aid. You can measure the gain or SPL response using a coupler or the real ear.

Before you use the LINK to begin a test, you need to make sure the correct client file is open in DSL as well as the LINK. (The LINK will list the client name in the status bar.) You also need to make sure that you have set the hearing aid circuit type to Linear or WDRC in DSL 4.1. Finally, look at the status bar to double check that the instrument is communicating with the LINK.

You are ready to test.

4.1.1 Running a Coupler Test for a Linear Aid

Follow the instructions in your FONIX instrument's operator's manual to set up the hearing aid in the sound chamber.

In the LINK...

1. Click on the mid-level target icon. A new window will open. See Figure 4.1.1
2. In the new window, open the display menu by clicking on it.
3. Choose either 'Coupler Amplitude Output' or 'Coupler Gain Output.' The first will measure the dB SPL returned by the hearing aid, and the second will measure the gain of the hearing aid.
4. Check the status bar to confirm which ear you are testing. If you would like to switch ears, use the Ear menu.

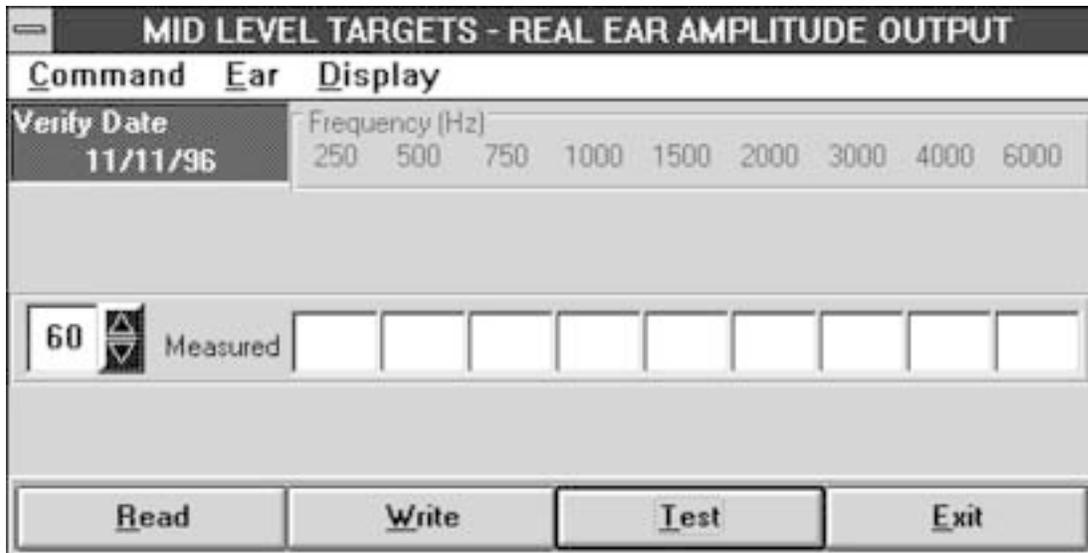


Figure 4.1.1

5. Select the source input value at the left of the window. Click on the up or down arrow to change the value. The range of possible source input values is 45 to 90 dB in 5 dB increments.

(Note for **6500-CX** users—you must select a source input of 50 dB or greater.)

6. Click on the ‘Test’ button to begin testing. The LINK will remotely reset the instrument and then enter the pure tone mode to begin the test. You may interrupt the test at any time by clicking on ‘Cancel.’

NOTE: It does not matter which mode your instrument is in when you command it to test. It will enter the pure tone mode for you.

7. When the test is complete there will be values displayed in the ten frequency boxes (the values will not be displayed on the instrument screen). The 250 and 750 Hz values are interpolated. The values at 200 and 300 Hz are averaged to find the 250 Hz value; 700 and 800 Hz to find the 750 Hz value.
8. To save the values in the client’s folder in the DSL program, press ‘Write.’

NOTE: When you do this step, a dialogue box will open reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

9. Enter the DSL program and click on the Open file icon. Say ‘No’ when the program asks you to save. (If you do choose ‘Yes,’ the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don’t panic. The data is still in

the LINK; just go back to that program and try again.) Once in the client file window, choose the record for the client you are currently working with, and click on 'Open.'

10. Once you have successfully written the measurement to the DSL program, you can view it alongside the target values by entering the mid-level verification screen. Or, you can view the measured values as part of an SPLogram by entering one of the SPLogram screens.

NOTE: DSL 4.1 will record the type of test (real ear or coupler, output or gain) as well as the measured values.

4.1.2 Running a Real Ear Test for a Linear Aid

Follow the instructions in your FONIX instrument's operator's manual to set up the hearing aid in your client's ear.

Before using the LINK, you'll need to level at the instrument. Instruct your client to sit very still while leveling.

Press the LEVEL button and then press START/STOP. If you have difficulty leveling, refer to the instrument's operator's manual for help.

In the LINK...

1. Click on the mid-level target icon. A new window will open. See Figure 4.1.1.
2. In the new window, open the display menu by clicking on it.
3. Choose either 'Real Ear Amplitude Output' or 'Real Ear Gain Output.' The first will measure the dB SPL returned by the hearing aid near the eardrum, and the second will measure the gain of the hearing aid in the ear.
4. Check the status bar to confirm which ear you are testing. If you would like to switch ears, use the Ear menu.
5. Select the source input value at the left of the window. Click on the up or down arrow to change the value. The range of possible source input values is 45 to 90 dB in 5 dB increments.

(Note for **6500-CX** users—you must select a source input of 50 dB or greater.)

6. Instruct your client to resume the position they were in during leveling, and ask them to remain still during the test. Click on the 'Test' button to begin testing. The LINK will remotely reset the instrument and then enter the probe mode to begin the test. You may interrupt the test at any time by clicking on 'Cancel.'

NOTE: It does not matter which mode your instrument is in when you command it to test. It will enter the probe mode for you.

7. When the test is complete there will be values displayed in the ten frequency boxes (the values will not be displayed on the instrument screen). The 250 and 750 Hz values are interpolated. The values at 200 and 300 Hz are averaged to find the 250 Hz value; 700 and 800 Hz to find the 750 Hz value.
8. To save the values in the client's folder in the DSL program, press 'Write.'

NOTE: When you do this step a dialogue box will open, reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

9. Enter the DSL program and click on the Open file icon. Say 'No' when the program asks you to save. (If you do choose 'Yes,' the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don't panic. The data is still in the LINK; just go back to that program and try again.) Once in the client file window, choose the record for the client you are currently working with, and click on 'Open.'
10. Once you have successfully written the measurement to the DSL program, you can view it alongside the target values by entering the mid-level verification screen. Or, you can view the measured values as part of an SPLogram by entering one of the SPLogram screens.

NOTE: DSL 4.1 will record the type of test (real ear or coupler, output or gain) as well as the measurement values.

4.1.3 Running a Coupler Test for a WDRC Aid

Follow the instructions in your FONIX instrument's operator's manual to set up the hearing aid in the sound chamber.

In the LINK...

1. Click on the mid-level target icon. A new window will open with a series of three test rows. See Figure 4.1.3.
2. In the new window, open the display menu by clicking on it.
3. Choose either 'Coupler Amplitude Output' or 'Coupler Gain Output.' The first will measure the dB SPL returned by the hearing aid, and the second will measure the gain of the hearing aid.

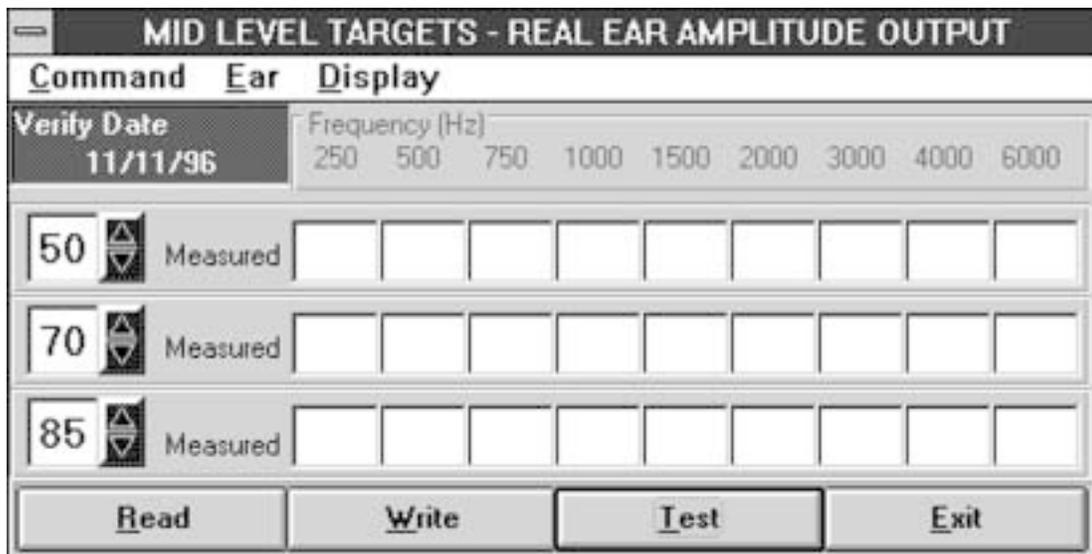


Figure 4.1.3

4. Check the status bar to confirm which ear you are testing. If you would like to switch ears, use the Ear menu.
5. Select the source input value at the left of each row. Click on the up or down arrow to change the values. The recommend values are 50 dB for the first test, 65 dB for the second, and 80 dB for the third, but the range of possible source input values is 45 to 90 dB in 5 dB increments.

(Note for **6500-CX** users—you must select a source input of 50 dB or greater for each test.)

6. Click on the 'Test' button to begin testing. The LINK will remotely reset the instrument and then enter the pure tone mode to begin the tests. You may interrupt the tests at any time by clicking on 'Cancel.' The LINK will not stop between tests; all three will be run each time you press 'Test.'

NOTE: It does not matter which mode your instrument is in when you command it to test. It will enter the pure tone mode for you.

7. When the tests are complete there will be values displayed in the ten frequency boxes for each test. (The values will not be displayed on the instrument screen.) The 250 and 750 Hz values are interpolated. The values at 200 and 300 Hz are averaged to find the 250 Hz value; 700 and 800 Hz to find the 750 Hz value.
8. To save the values in the client's folder in the DSL program, press 'Write.'

NOTE: When you do this step a dialogue box will open, reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

9. Enter the DSL program and click on the Open file icon. Say 'No' when the program asks you to save. (If you do choose 'Yes,' the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don't panic. The data is still in the LINK; just go back to that program and try again.) Once in the client file window, choose the record for the client you are currently working with, and click on 'Open.'
10. Once you have successfully written the measurements to the DSL program, you can view them alongside the target values by entering the mid-level verification screen. Or, you can view the measured values as part of an SPLogram by entering one of the SPLogram screens.

NOTE: DSL 4.1 will record the type of test (real ear or coupler, output or gain) as well as the measurement values.

4.1.4 Running a Real Ear Test for a WDRC Aid

Follow the instructions in your FONIX instrument's operator's manual to set up the hearing aid in your client's ear.

Before using the LINK, you'll need to level at the instrument. Instruct your client to sit very still while leveling.

Press the LEVEL button and then press START/STOP. If you have difficulty leveling, refer to the instrument's operator's manual for help.

In the LINK...

1. Click on the mid-level target icon. A new window will open with a series of three test rows. See Figure 4.1.3.
2. In the new window, open the display menu by clicking on it.
3. Choose either 'Real Ear Amplitude Output' or 'Real Ear Gain Output.' The first will measure the dB SPL returned by the hearing aid near the eardrum, and the second will measure the gain of the hearing aid in the ear.
4. Check the status bar to confirm which ear you are testing. If you would like to switch ears, use the Ear menu.

5. Select the source input value at the left of each row. Click on the up or down arrow to change the value. The recommended test values are 50 dB for the first test, 65 dB for the second, and 80 dB for the third, but the range of possible source input values is 45 to 90 dB in 5 dB increments.

(Note for **6500-CX** users—you must select a source input of 50 dB or greater for each test.)

6. Instruct your client to resume the position they were in during leveling, and ask them to remain still during the tests. Click on the 'Test' button to begin testing. The LINK will remotely reset the instrument and then enter the probe mode to begin the test. You may interrupt the test at any time by clicking on 'Cancel.' The LINK will not stop between tests; all three will run each time you press 'Test.'

NOTE: It does not matter which mode your instrument is in when you command it to test. It will enter the probe mode for you.

7. When the tests are complete there will be values displayed in the ten frequency boxes for each test. (The values will not be displayed on the instrument screen.) The 250 and 750 Hz values are interpolated. The values at 200 and 300 Hz are averaged to find the 250 Hz value; 700 and 800 Hz to find the 750 Hz value.

8. To save the values in the client's folder in the DSL program, press 'Write.'

NOTE: When you do this step a dialogue box will open, reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

9. Enter the DSL program and click on the Open file icon. Say 'No' when the program asks you to save. (If you do choose 'Yes,' the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don't panic. The data is still in the LINK; just go back to that program and try again.) Once in the client file window, choose the record for the client you are currently working with, and click on 'Open.'

10. Once you have successfully written the measurements to the DSL program, you can view them alongside the target values by entering the mid-level verification screen. Or, you can view the measured values as part of an SPLogram by entering one of the SPLogram screens.

NOTE: DSL 4.1 will record the type of test (real ear or coupler, output or gain) as well as the measurement values.

4.2 Hi-Level Testing

Generally, hi-level testing is done to determine the saturation response of the hearing aid. A source input value of 90 dB is typically used.

Follow the instructions in your FONIX instrument's operator's manual to set up the hearing aid in the sound chamber if you plan to run a coupler test.

If you plan to do a real ear test, follow the instructions in your FONIX instrument's operator's manual to set up the hearing aid in your client's ear. Before using the LINK, you'll need to level at the instrument. Instruct your client to sit very still while leveling. Press the LEVEL button and then press START/STOP. If you have difficulty leveling, refer to the instrument's operator's manual for help.

In the LINK...

1. Click on the hi-level target icon. A new window will open. See Figure 4.2.

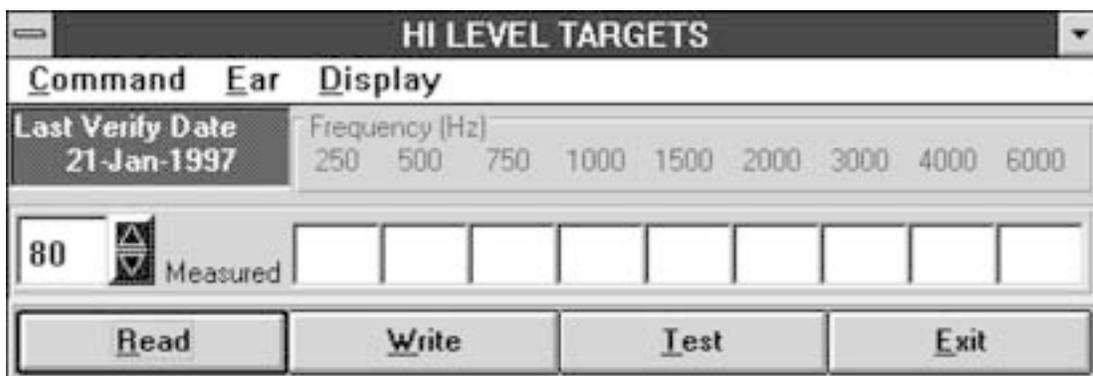


Figure 4.2

2. In the new window, open the display menu by clicking on it.
3. Choose either 'Coupler Amplitude Output' or 'Real Ear Amplitude Output.'
4. Check the status bar to confirm which ear you are testing. If you would like to switch ears, use the Ear menu.
5. Select the source input value at the left of the window. Click on the up or down arrow to change the value. The recommend value is 90 dB, but the range of possible source input values is 90 to 100 dB in 5 dB increments.
6. If you are testing in real ear, instruct your client to resume the position they were in during leveling and to remain still during the test. Click on the 'Test' button to begin testing. The LINK will remotely reset the instrument and then

enter the proper mode to begin the tests. You may interrupt the tests at any time by clicking on 'Cancel.'

NOTE: It does not matter which mode your instrument is in when you command it to test. It will enter the proper mode for you.

7. When the test is complete there will be values displayed in the ten frequency boxes (the values will not be displayed on the instrument screen). The 250 and 750 Hz values are interpolated. The values at 200 and 300 Hz are averaged to find the 250 Hz value; 700 and 800 Hz to find the 750 Hz value.

8. To save the values in the client's folder in the DSL program, press 'Write.'

NOTE: When you do this step a dialogue box will open, reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

9. Enter DSL, and click on the Open file icon. Answer 'No' when DSL asks if you would like to save. (If you do choose 'Yes,' the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don't panic. The data is still in the LINK; just go back to that program and try again.) Choose the client record that you are already working with and click on 'Open.'

10. Once you have successfully written the measurements to the DSL program, you can view them alongside the target values by entering the hi/lo-level verification screen. Or, you can view the measured values as part of an SPLogram by entering one of the SPLogram screens.

NOTE: DSL 4.1 will record the type of test (real ear or coupler, output or gain) as well as the measurement values.

4.3 Measuring the RECD

The RECD value, or real ear to coupler difference, is important in DSL testing because it is used to better calculate the target values. A predicted RECD is available for use in DSL, but because ear canals vary widely, it is a good idea to take a custom measurement.

In order to take this measurement, you need the 3S insert earphone available from Frye Electronics, Inc., or a similar 50 ohm insert earphone. You will also need a foam eartip that is the proper size for your client.

Plug the insert earphone into the external speaker jack on the back of your instrument. (This jack is labeled 'Speaker' on the 6500 and 'External Speaker' on the FP40.)

In the Client's Ear...

1. Before you put the eartip into your client's ear, place a probe tube (still attached to the probe mic) into the client's ear as you usually would. (See your FONIX instrument's operator's manual for details.)
2. Roll the foam eartip between your finger and thumb to compress its diameter.
3. Now, holding the probe tube carefully in place, push the ear tip into the client's ear canal
4. Connect the insert earphone's tubing to the foam eartip. See Figure 4.3A

NOTE: A custom earmold may be used instead of the foam eartip. Be sure to adjust your DSL menu settings accordingly.

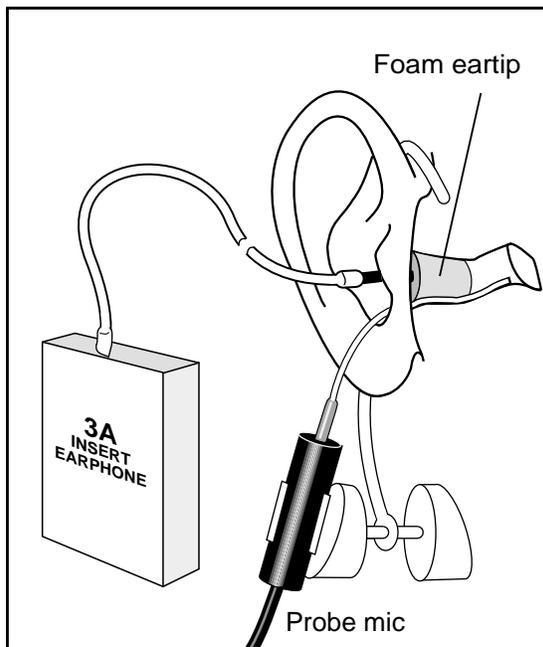


Figure 4.3A

In the LINK...

1. Click on the RECD icon. A new window will open. See Figure 4.3B

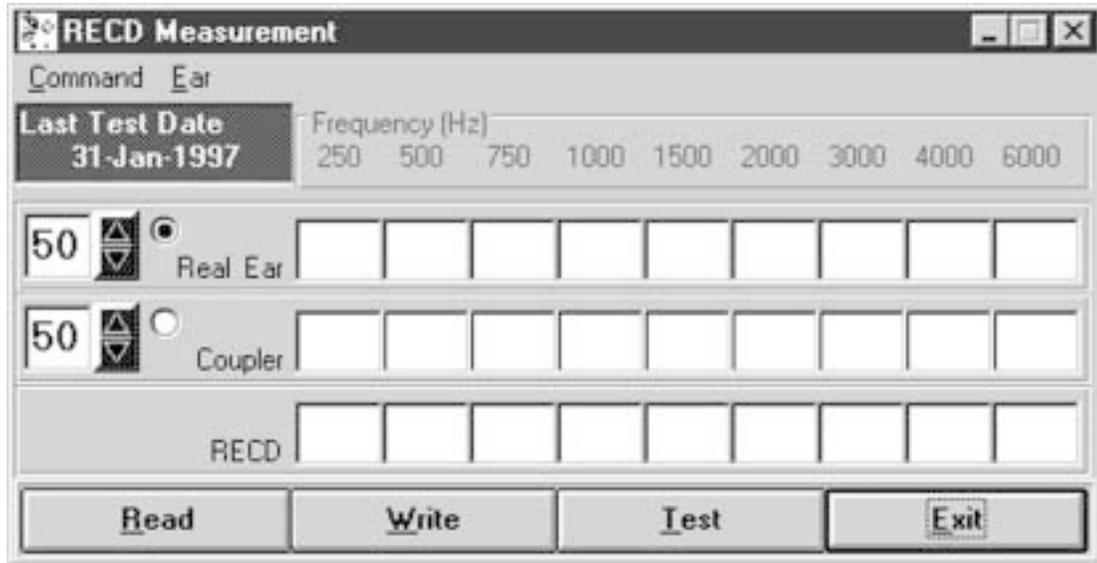


Figure 4.3B

2. Set the source input for the real ear test.
3. Click on 'Test.' The LINK will measure the real ear values.

In the Coupler...

1. Once the real ear test is done, remove the foam eartip/insert earphone assembly from the client's ear.
2. Locate the probe tube adapter that came with the FP40.
3. Thread the probe tube (still attached to its mic) through the adapter so that the tip extends about 2-3 mm past the end of the adapter.
4. Push the adapter into a HA-2 coupler, being careful not to disturb the position of the probe tube.
5. Connect the insert earphone's tubing to the coupler's tubing. The insert earphone tubing has a notch on the end; it should just slip right into the coupler tubing. See Figure 4.3C for a picture of the complete coupler setup.

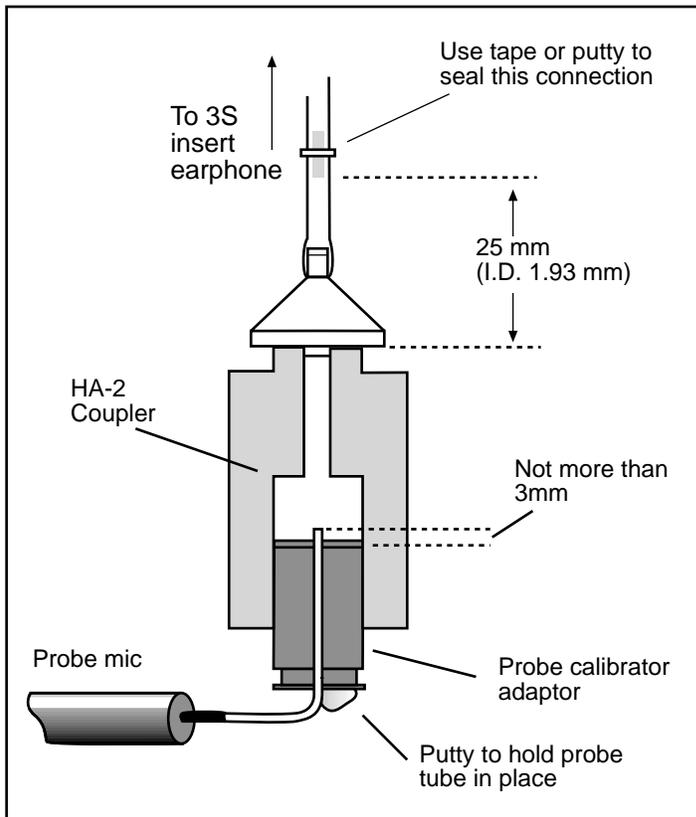


Figure 4.3C

In the LINK...

1. Set the coupler source input to equal that of the real ear test.
2. Click on 'Test.'
3. When the test is complete, the LINK will show the RECD values at the bottom of the window.
4. Click on 'Write' to send the values to DSL.
5. A dialogue box will open, asking if you would like to save the coupler response. If you intend to always use the same coupler for your hearing aid tests, answering 'Yes' is a good idea. The coupler measurement will be stored, saving you that step in the future.
6. To save the values in the client's folder in the DSL program, press 'Write.'

NOTE: When you do this step a dialogue box will open, reminding you to enter the DSL program and reload the client file, but not to save when DSL prompts you to. This is important.

7. Enter DSL, and click on the Open file icon. Answer 'No' when DSL asks if you would like to save. (If you do choose 'Yes,' the transfer of data from the LINK to DSL will be interrupted. If this happens to you, don't panic. The data is still in the LINK; just go back to that program and try again.) Choose the client record that you are already working with and click on 'Open.'
8. Once you have successfully written the measurements to the DSL program, it will be stored in the 'Assessment Data' screen along with the audiogram.