gsi Grason-Stadler

Audio Tymp Module for NOAH

User Manual

Part Number 1002-0105 Rev. D

www.grason-stadler.com
Grason-Stadler, 7625 Golden Triangle Drive, Suite F, Eden Prairie MN 55344
800-700-2282 | 952-278-4402 | fax 952-278-4401 | email info@grason-stadler.com

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1. Minimum Requirements

1.1. NOAH 3.7 ® or higher

IBM or IBM-compatible PC with the following:

- Pentium III, 1GHz
- 256 MB (512 MB recommended)
- 1 GB of free space for NOAH (5 GB recommended), 1 GB of free space for EACH installed module, and 1 GB of free space for the client database
- Windows XP Professional SP3 (32-bit versions only, Windows Vista (including Vista Home Basic, Vista Home Premium, Vista Business, Vista Enterprise, and Vista Ultimate), Windows 7, and for NOAH network installations you can also use Windows 2008 Server or 2003 Server SP1 for the NOAH Server PC
- 800 x 600 (1024 x 768 recommended)
- CD ROM drive
- OneUSB Port for NOAHlink's Bluetooth adapter
- Internet Explorer Version 5.5 or later
- Adobe Acrobat Reader is needed to read the NOAH manuals; this can be installed from the NOAH installation CD

1.2. NOAH 4.1 ® or higher

IBM or IBM-compatible PC with the following:

- Pentium III, 1GHz
- 512 MB
- 1 GB of free space for NOAH, 1 GB of free space for EACH installed module, and 4 GB of free space for the patient database
- Windows XP Professional SP3 (32-bit versions only, XP Home not supported), Windows Vista SP2, and Windows 7 (except Windows 7 Starter versions)
- 1024 x 768 or higher
- Bluetooth required for NOAHlink
- Adobe Acrobat Reader is needed to read the NOAH manuals; a free reader may be downloaded from the Adobe website.

1.3. GSI® Audio Tymp Module

The GSI Audio Tymp Module requires NOAH 3.1 or higher be installed on a PC meeting the NOAH requirements stated above. In addition, at least one serial COM port is required to connect GSI equipment (two ports will be needed to connect a GSI 61 and GSI TympStar). It is possible to download information from more than one piece of equipment. This typically requires the use of an appropriate USB to Serial Port adapter and/or an A/B USB cable, see the following section for more details.

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2. Hardware Installation

The GSI Audio Tymp Module allows data transfer from Grason-Stadler audiometers (GSI 61) and tympanometers (TympStar Version 1 and 2) and the GSI 39 autotymp. The following section describes the hardware connections for data transfer. It is possible to connect both an audiometer and a tympanometer to a selected computer; this may require the use of a USB to Serial Port adapter and/or an A/B USB cable if the computer has only one Serial COM port. Connection of more than one audiometer is not possible, due to the "electronic handshake" required by the equipment for data transfer.

A/B USB Cable (for GSI 61 with USB) 085-450700

DB-25 Pin Converter Cable and Driver (for GSI 61 with Serial Circular DIN Connections) 4205-1100

8 Pin Mini-DIN to DB 25 Cable (for GSI 61 with Serial Circular DIN Connections) 4205-1000

25 Pin DB25 Gender Changer (for GSI 61 with Serial Circular DIN Connections) 4230-3725

DB-9 Pin Serial to USB Converter Cable and Driver (for TympStar) 4205-1110

3 Meter USB Extension Cable (for TympStar) 4204-0300

2.1. Audiometers

GSI 61RS232

Connect the supplied cabling between the **GSI 61** Remote Option Cable and an available USB port on your computer, then install the USB driver:

- Connect the 8-pin mini-DIN to the DB-25 cable (4205-1000) to the circular port on the **GSI 61**.
- Connect the 25-pin DB gender changer (4230-3725) to the 8 pin mini-DIN to the DB25 cable.
- Connect the DB25 pin converter cable (4205-1100) to the gender changer and the USB port on your computer.
  Use the supplied 25-pin Male to 9-pin Female adapter if your computer has a 9-pin Male connector.

GSI 61 USB and GSI 39

Connect the A/B USB cable to the instrument and an available USB port on the computer.

2.2. Tympanometers

TympStar Version 1 or Version 2

Install the serial to USV driver on your computer and then connect the supplied cabling to the TympStar.

Connect the DB-9 Serial to USB converter (4205-1100) to the TympStar. If needed, add the 3 meter USB Extension Cable (4204-0300) to serial to USB converter cable, then connect the USB to your computer.

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3. Software Installation

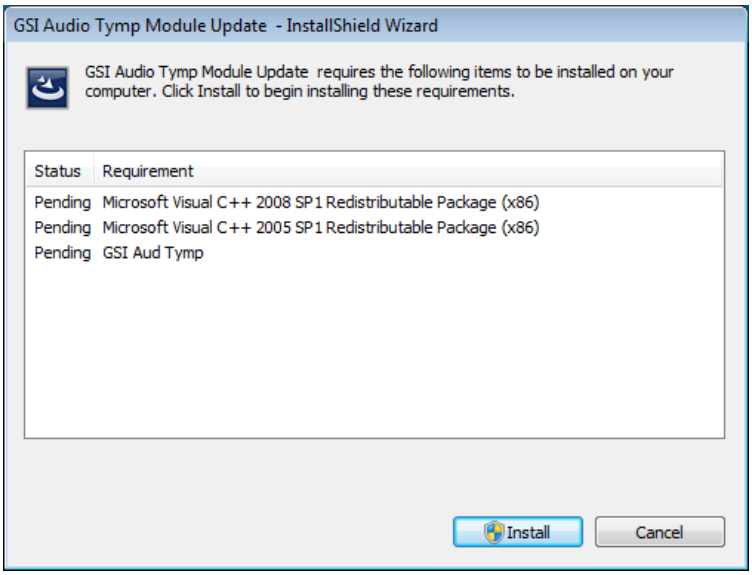
Ensure that NOAH System is installed and working on the computer that you want to install the GSI Audio Tymp Module.

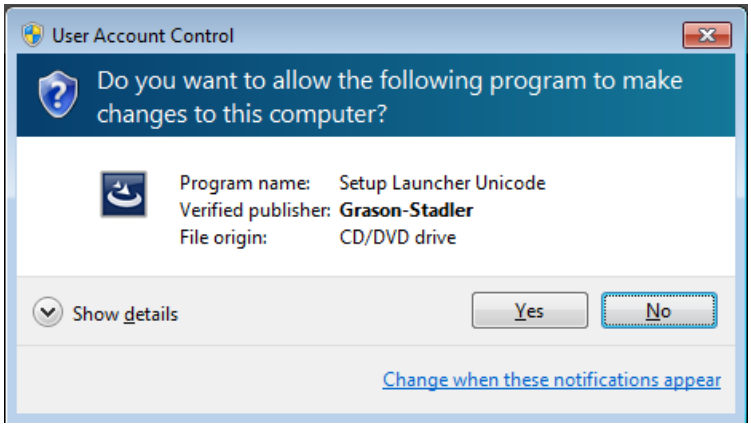
3.1. Install GSI Audio Tymp Module

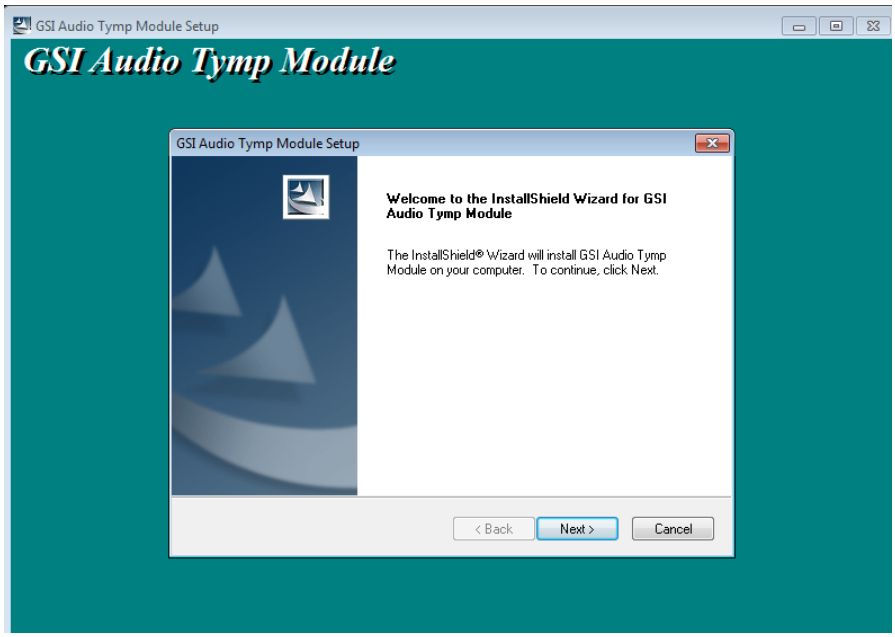
The following instructions are the same for stand-alone NOAH and networked NOAH. The **GSI Audio Tymp Module** must be installed on each PC that will be used to take audiometric or tympanometric measurements directly from GSI equipment.

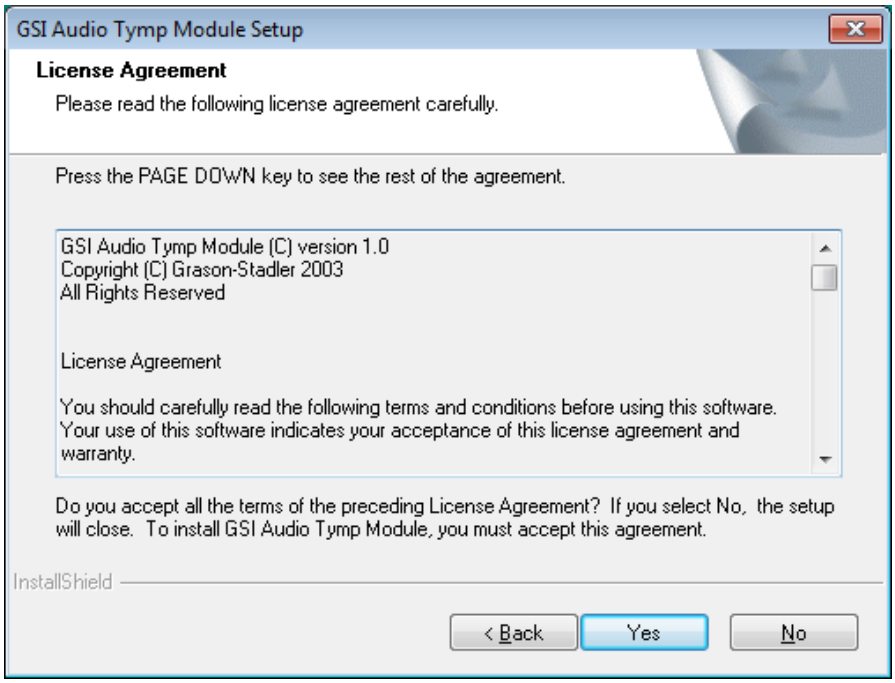
1. Close any running applications, including NOAH.
2. Insert the **GSI Audio Tymp Module for NOAH3 or NOAH4** CD into the computer's CD-ROM drive.

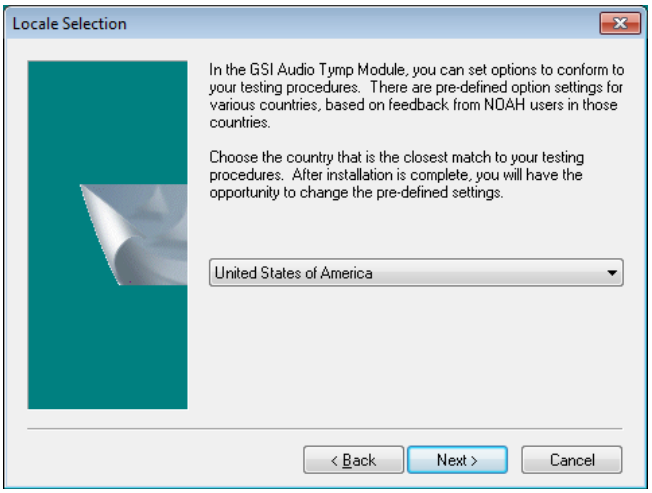
3. If the installation doesn't automatically start, from the Windows **Start** menu, select **Run**. Type **x:setup**, where **x** is the drive letter of your CD-ROM drive. Click **OK** to start the installation.
4. InstallShield will guide you through the remainder of the Audio Tymp Module installation. Accepting the default installation parameters is recommended.

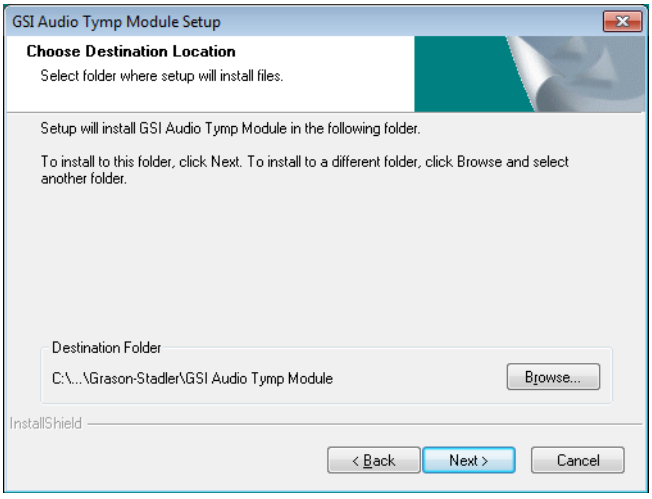

GSI Audio Tymp Module Update - InstallShield Wizard
GSI Audio Tymp Module Update requires the following items to be installed on your computer. Click Install to begin installing these requirements.
Status
Requirement
Pending
Microsoft Visual C++ 2008 SP1 Redistributable Package (x86)
Pending
Microsoft Visual C++ 2005 SP1 Redistributable Package (x86)
Pending
GSI Aud Tymp
Install
Cancel

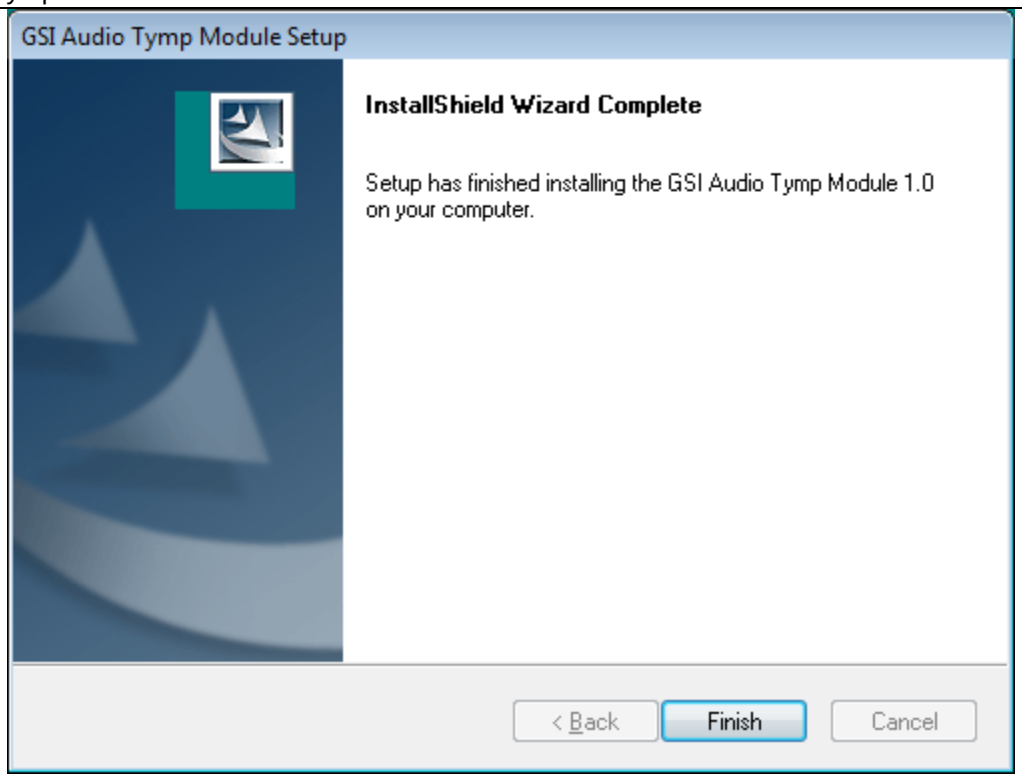

User Account Control
Do you want to allow the following program to make changes to this computer?
Program name: Setup Launcher Unicode
Verified publisher: Grason-Stadler
File origin: CD/DVD drive
Show details
Yes
No
Change when these notifications appear


GSI Audio Tymp Module Setup
GSI Audio Tymp Module
GSI Audio Tymp Module Setup
Welcome to the InstallShield Wizard for GSI Audio Tymp Module
The InstallShield® Wizard will install GSI Audio Tymp Module on your computer. To continue, click Next.
< Back
Next >
Cancel

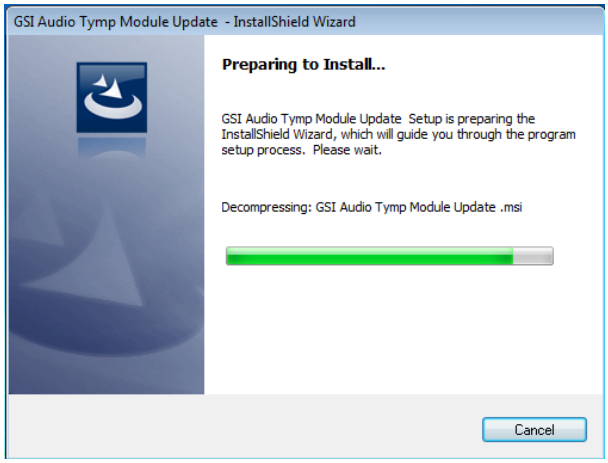

GSI Audio Tymp Module Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
GSI Audio Tymp Module (C) version 1.0
Copyright (C) Grason-Stadler 2003
All Rights Reserved
License Agreement
You should carefully read the following terms and conditions before using this software. Your use of this software indicates your acceptance of this license agreement and warranty.
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install GSI Audio Tymp Module, you must accept this agreement.
InstallShield
< Back
Yes
No

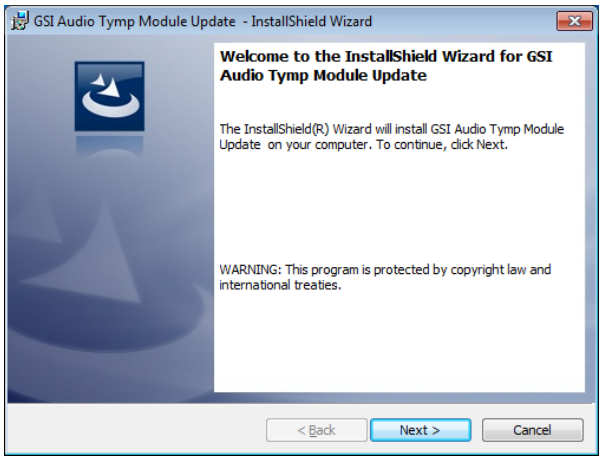

Locale Selection
In the GSI Audio Tymp Module, you can set options to conform to your testing procedures. There are pre-defined option settings for various countries, based on feedback from NOAH users in those countries.
Choose the country that is the closest match to your testing procedures. After installation is complete, you will have the opportunity to change the pre-defined settings.
United States of America
< Back
Next >
Cancel

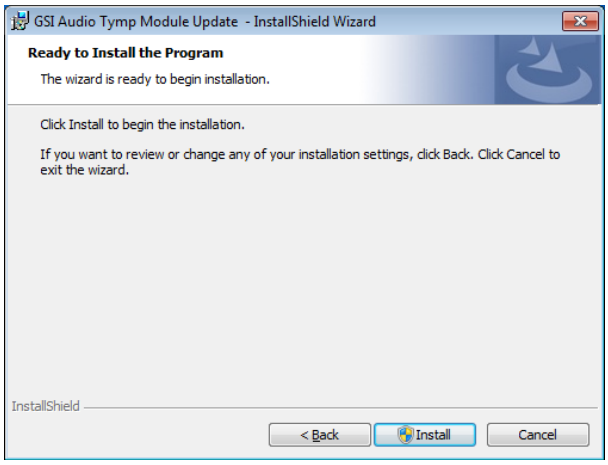

GSI Audio Tymp Module Setup
Choose Destination Location
Select folder where setup will install files.
Setup will install GSI Audio Tymp Module in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\...\Grason-Stadler\GSI Audio Tymp Module
Browse...
InstallShield
< Back
Next >
Cancel

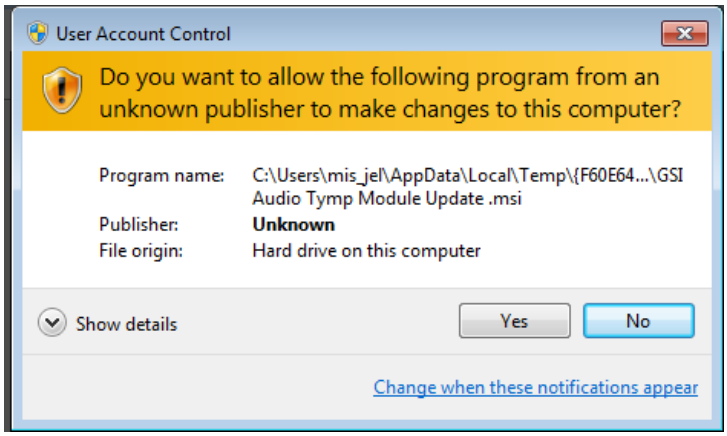


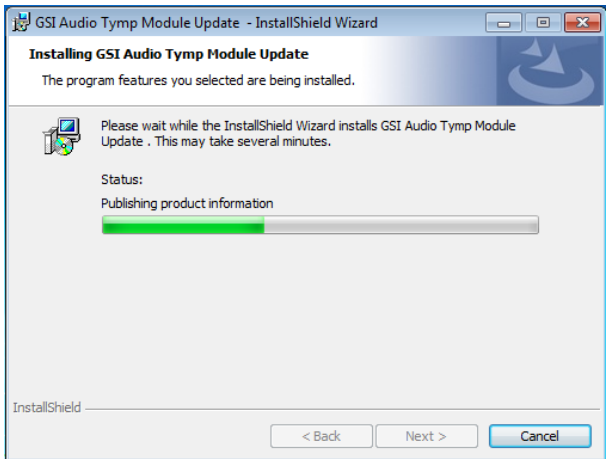
5. AudioTymp Module V1.0 is now installed. Do not remove the CD, the install for V1.1 will now continue.

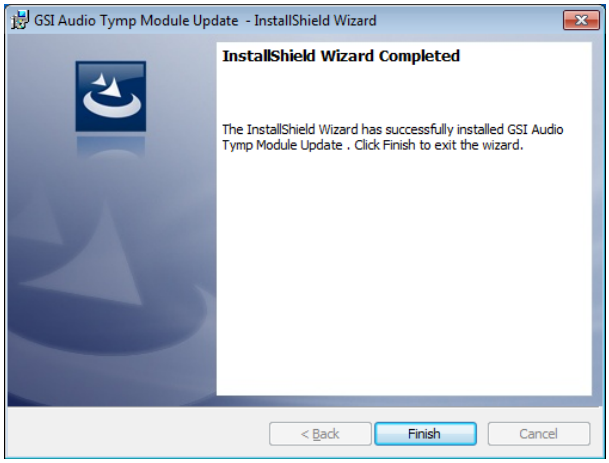



GSI Audio Tymp Module Update - InstallShield Wizard
Welcome to the InstallShield Wizard for GSI Audio Tymp Module Update
The InstallShield(R) Wizard will install GSI Audio Tymp Module Update on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
< Back
Next >
Cancel


GSI Audio Tymp Module Update - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel


User Account Control
Do you want to allow the following program from an unknown publisher to make changes to this computer?
Program name: C:\Users\mis_jel\AppData\Local\Temp\{F60E64...\GSI Audio Tymp Module Update .msi
Publisher: Unknown
File origin: Hard drive on this computer
Show details
Yes
No
Change when these notifications appear





6. When the Installation is complete, remove the Audio Tymp Module CD from the computer and put it in a safe place for storage.
7. Reboot the computer.

3.2. Connect the GSI Equipment

After connecting the GSI Equipment using the instructions in the previous section, turn on the audiometer or tympanometer. If the equipment is equipped with a REMOTE button, activate it.

3.3. GSI Audio Tymp Module Setup

The **GSI Audio Tymp Module** is shipped with defaults that match the factory configurations of the Grason-Stadler audiometers (GSI 10, GSI 16, GSI 61 and GSI 39) and tympanometers (TympStar version 1 and 2). Modifications from the factory defaults may be necessary to ensure that optimal communication between the selected computer and diagnostic equipment. Settings are changed within the Equipment Setup dialog box. To optimize communication between the equipment, follow these steps.

NOTE: The TympStar instrument options must be set to **Summary** only. See the TympStar User Manual for further instructions.

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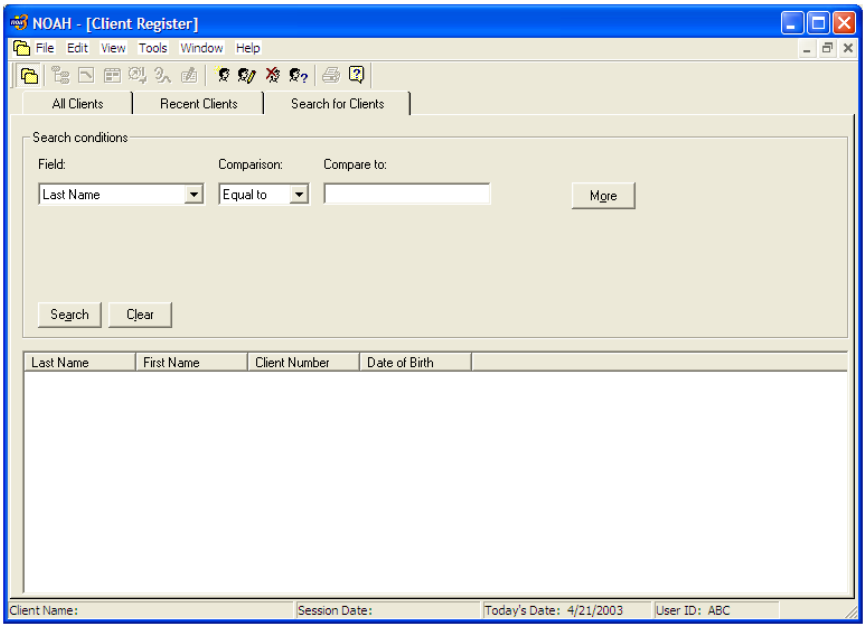
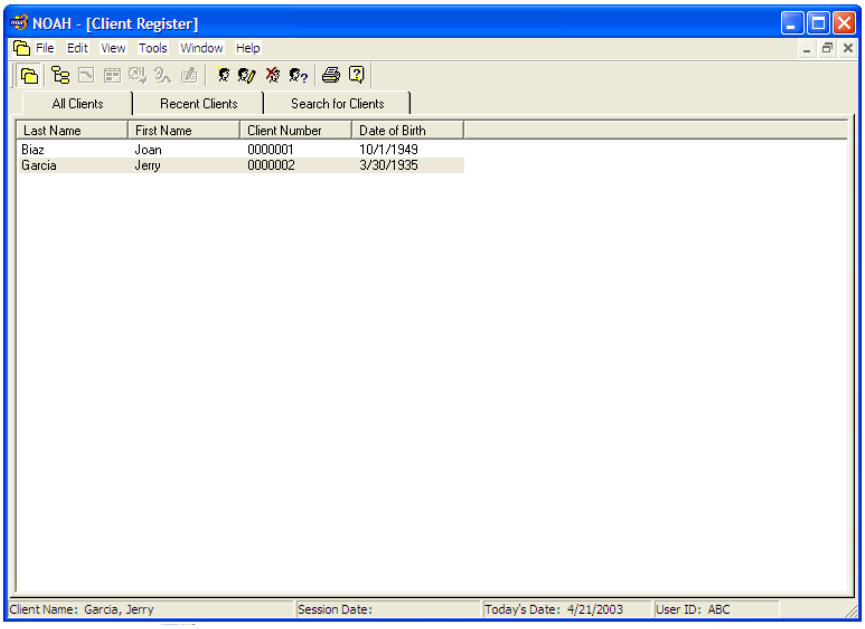
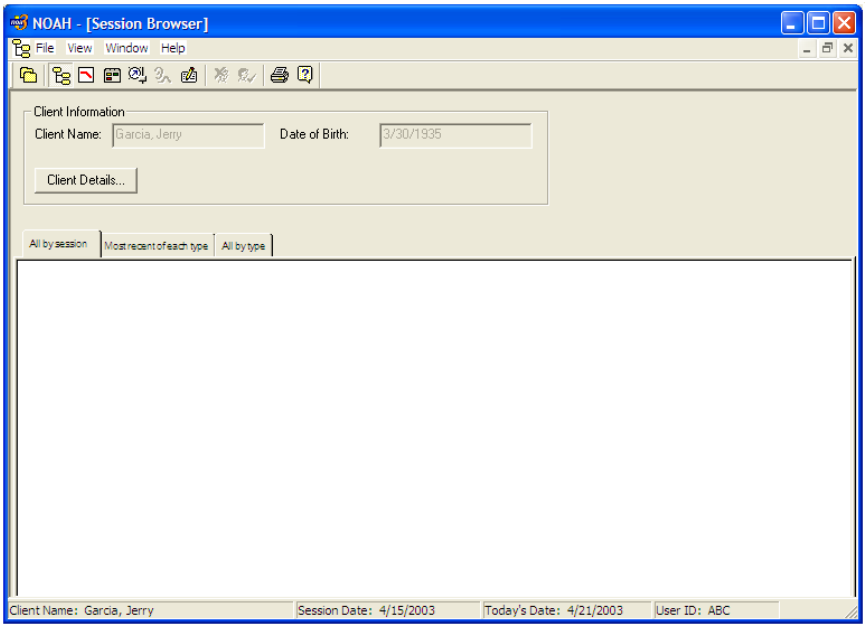
1. Start NOAH 3 and login according to its instructions.



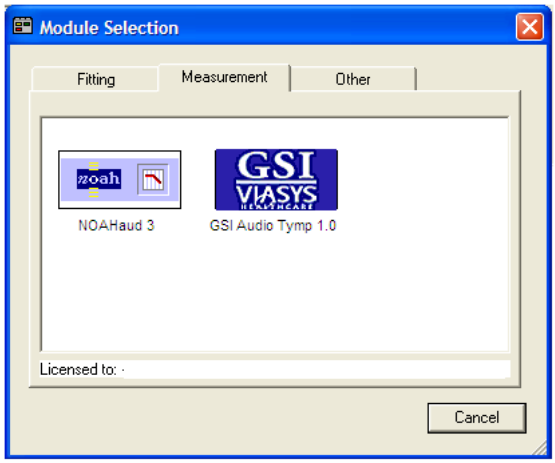
2. Select the **All Clients** or **Recent Clients** tab.



3. Enter a new client or Select an existing client by double-clicking on the **client's name**. The NOAH Session Browser will be displayed.

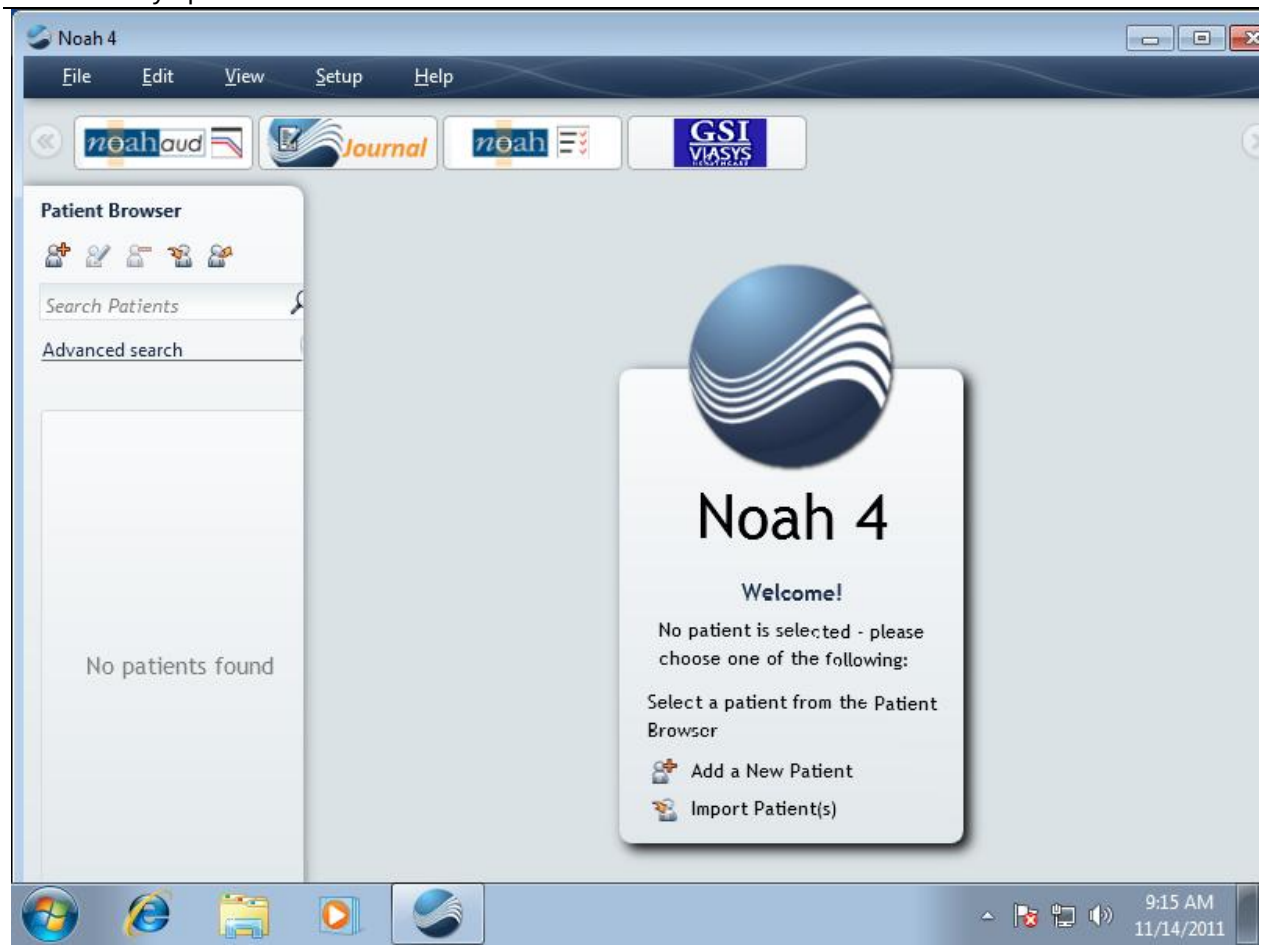


4. Open the GSI Audio Tymp Module by clicking on the **Open Module Selection** toolbar button. Click on the **Measurements** tab, double click on the **GSI Audio Tymp Module** icon.



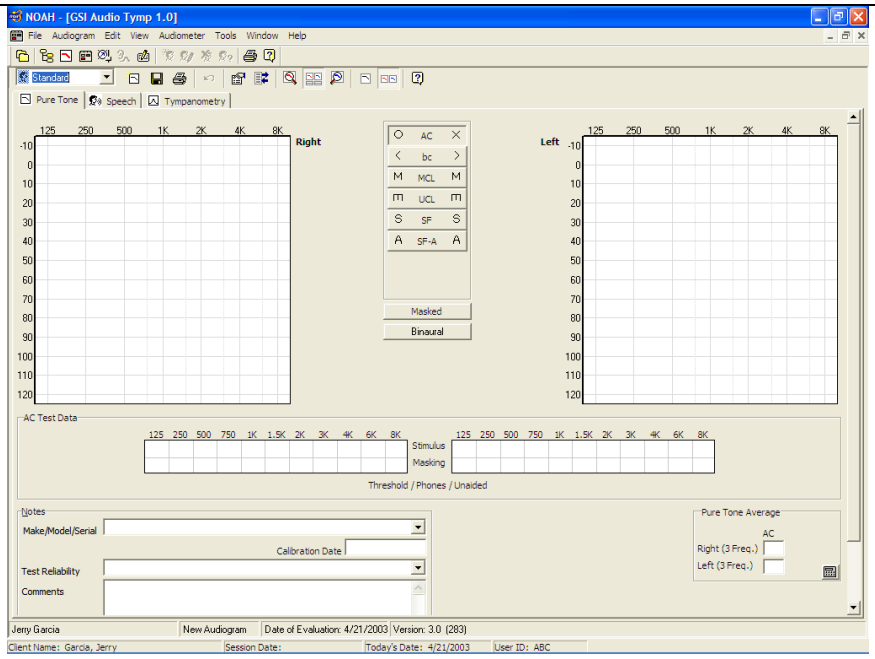
1. Open NOAH 4.

2. Add a new patient or select an existing patient.

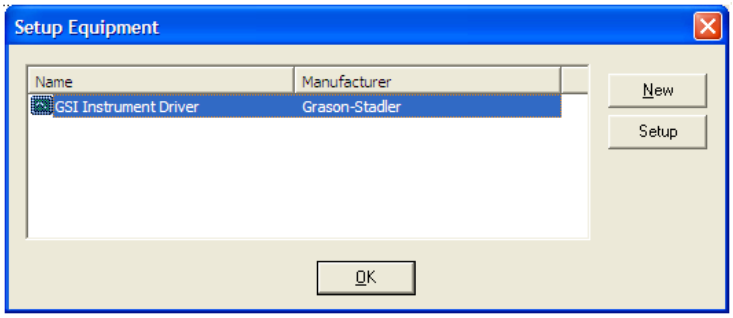


3. Select the Audio Tymp Module from the module menu bar.

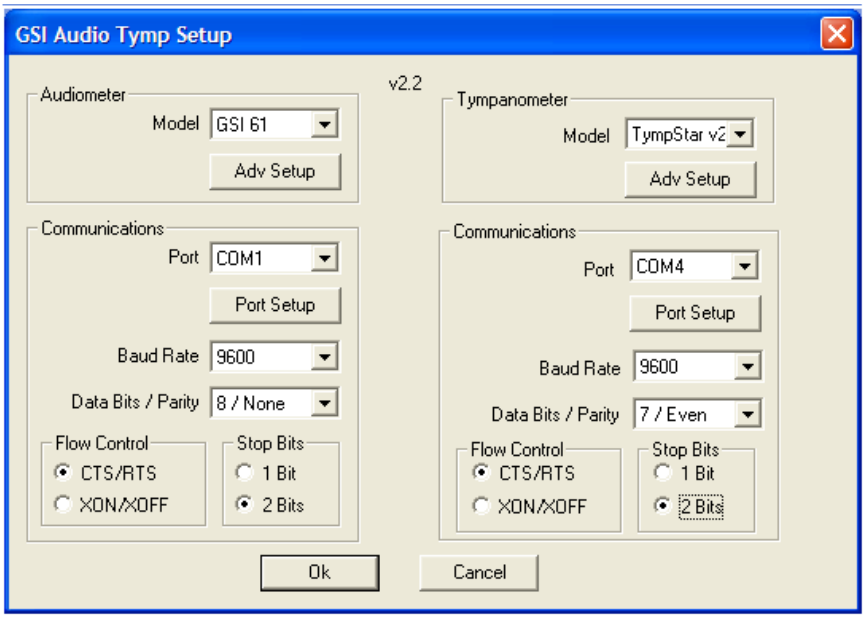
4. The GSI Audio Tymp Module uses the NOAH Aud module.



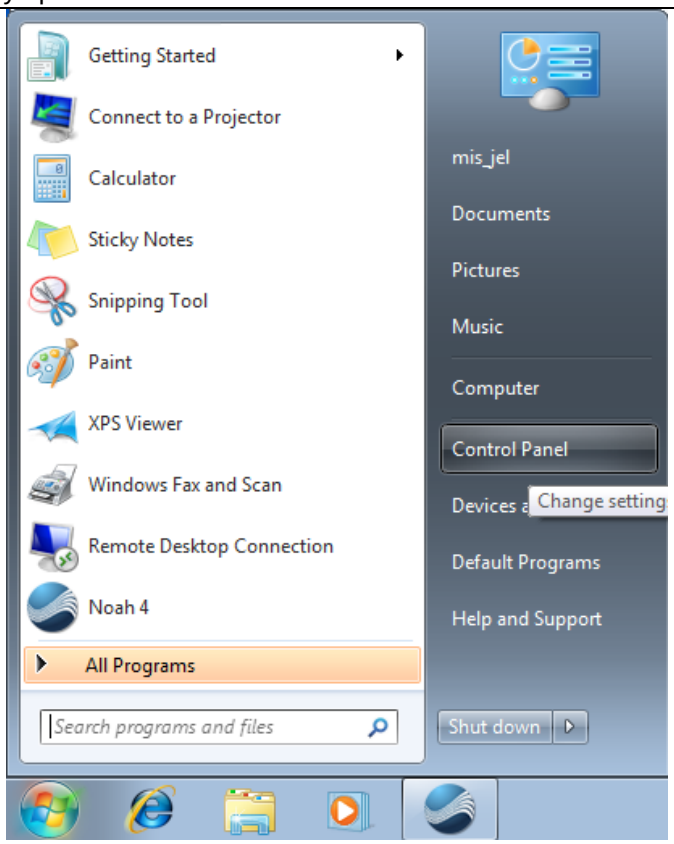
5. To setup the equipment communication, select **Tools | Setup Equipment.** Highlight GSI Equipment, click **Setup**.



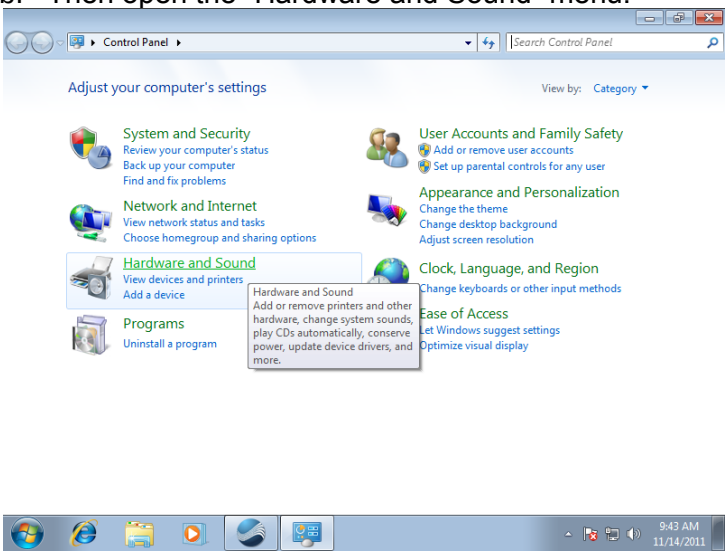
6. The GSI Audio Tymp Setup dialog box appears.



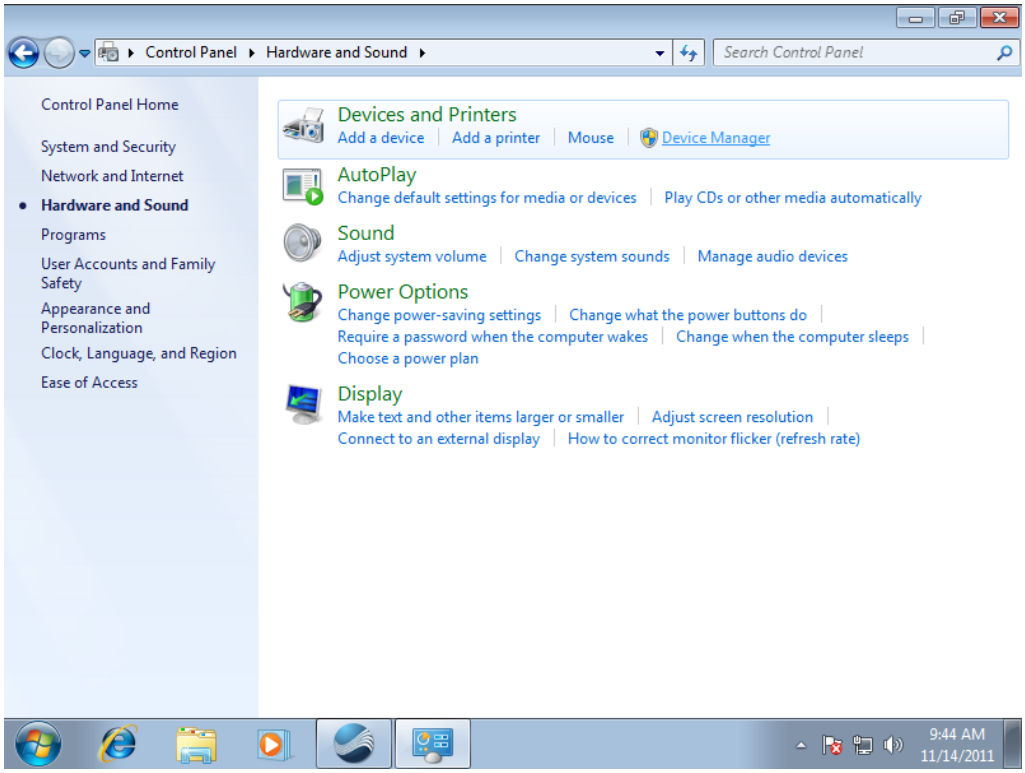
7. "None" is selected by default. Use the **Model** drop down list-box to select the **GSI 10, GSI 16**, **GSI 61 or GSI 39** on the Audiometer side, or **TympStar V1** or **TympStar V2** on the Tympanometer side.
8. Select the Communication Port used to connect the GSI Equipment to your computer.
9. The **Port**, **Baud Rate**, **Data Bits/Parity**, **Flow Control** and **Stop Bits** are set to the factory defaults for each instrument.
   These only require modification when the Audiometer's internal DIP switches or the Tympanometers software settings have been changed. See the sections on **Audiometer or Tympanometer Communications** for more information.
10. Click **OK** to accept these settings, and close the **GSI Audio Tymp Setup** dialog.
11. Click **OK** to complete the equipment setup and close the **Setup Equipment** dialog box.
12. If the com port is unknow or invalid, use the following steps to identify and configure the com ports.
    a. Open the "Control Panel."



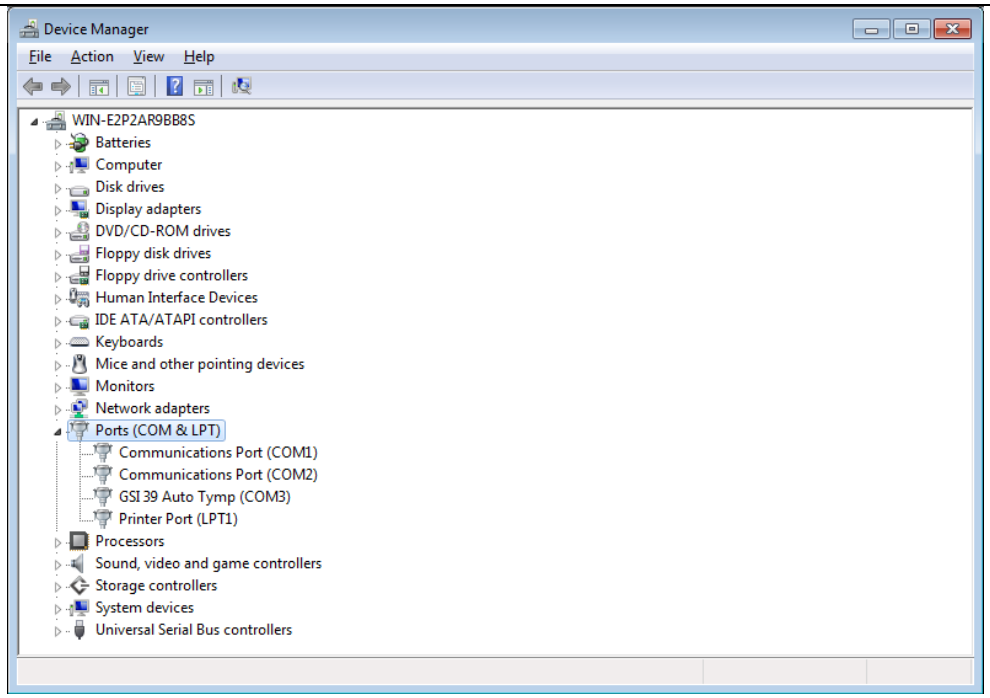
b. Then open the "Hardware and Sound" menu.



c. From the "Hardward and Sound" menu select the "Device Manager."

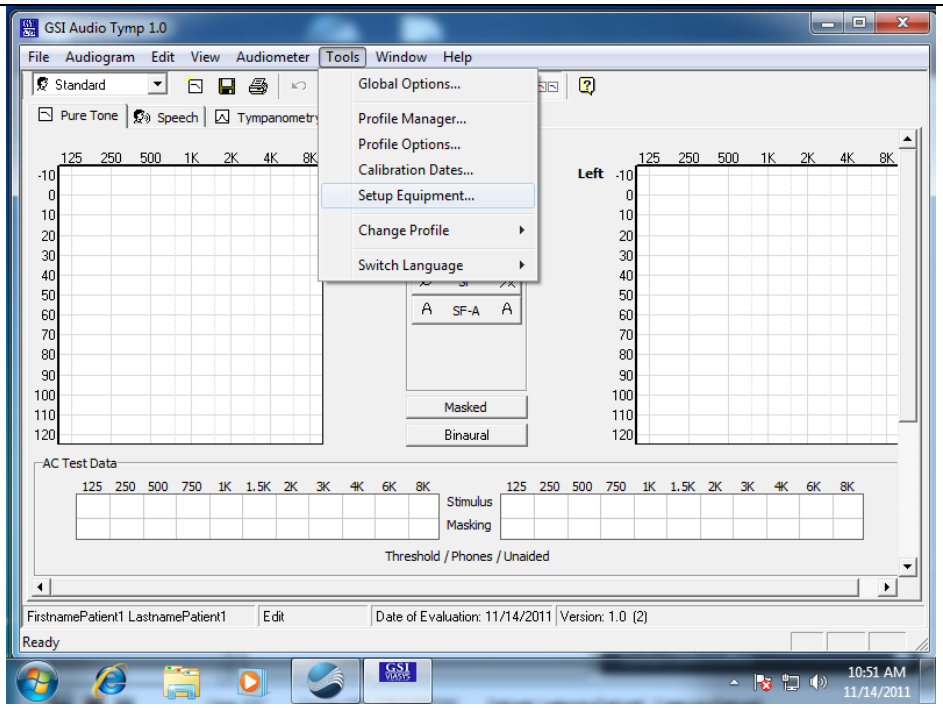


d. Open the "Ports (COM & LPT)" and verify that the connected GSI instrument is found. If it shows in another location or is yellow, the Driver installed has not been completed. Take appropriate action to complete the installation (check the connection, restart the PC, etc. The port COM number should be between one and ten; if not, right click and reassign a low number that is not currently in use.

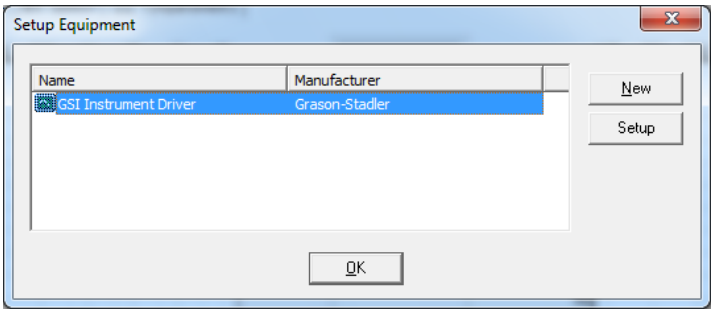


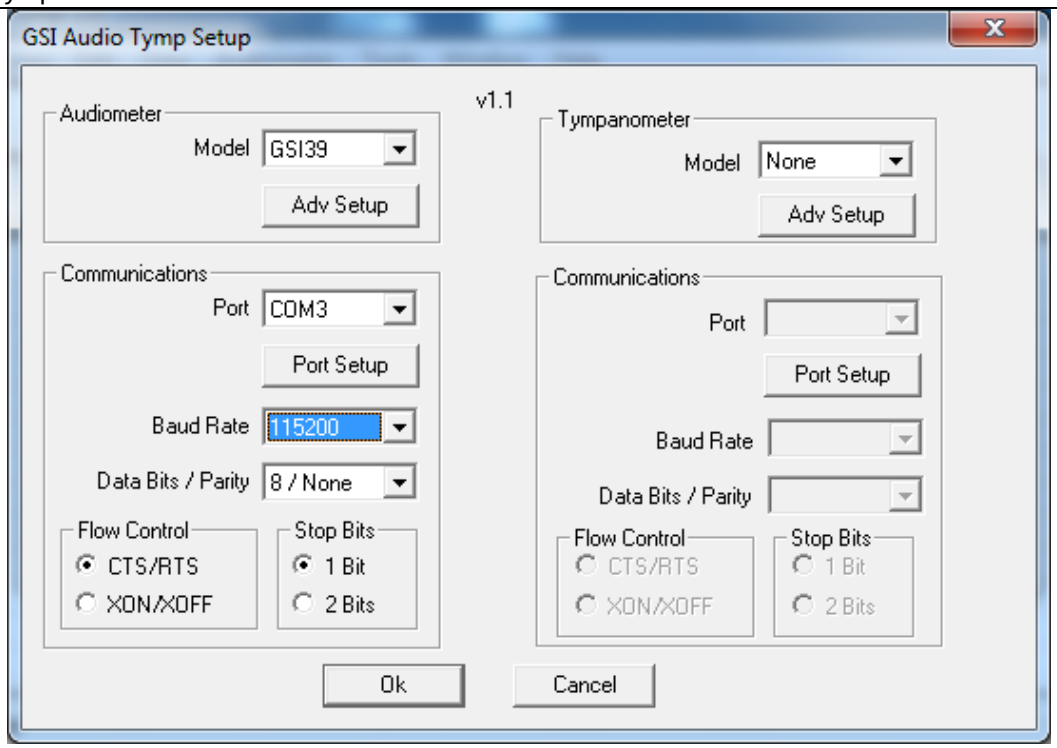
e. Re-open the Audio Tymp Module and procede to the "Setup Equipment" steps.

f. Verify or adjust the communications settings to work with the GSI equipment by selecting from the "GSI Audi Tymp 1.0" Windows menu "Tools" or "Setup Equipment."

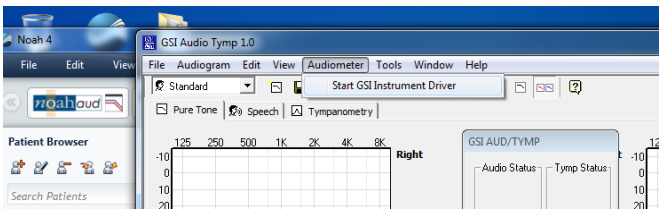


g. And then highlighting the GSI Instrument Driver. Click on "Setup."





h. After the equipment is setup, select "Audiometer" or "Start GSI Instrument Driver" from the "GSI Audio Tymp 1.0" menu.



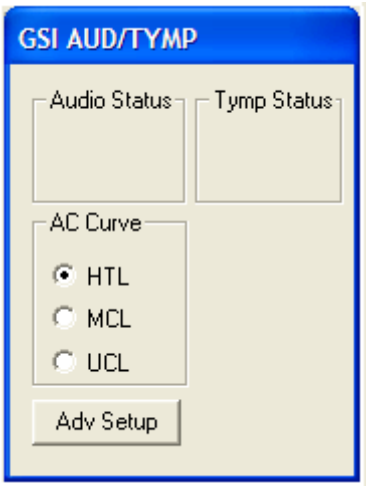
3.4. Uninstall GSI Audio Tymp Module

This section is entirely optional and should only be used if you want to remove the GSI Audio Tymp Module from your computer.

1. Close any running applications, including NOAH.
2. From the Windows **Start** menu, select **Settings | Control Panel**.
3. Double click on the **Add/Remove Programs** icon.
4. Select **GSI Audio Tymp Module** in the list of removable software, then click the **Change/Remove** button.
5. InstallShield will guide you through the remainder of the GSI Audio Tymp Module removal.
6. Close Control Panel.

4. Data Transfer

To start data collection, select **Audiometer | Start GSI Instrument Driver.** The following dialog box appears in the middle of the GSI Audio Tymp Module screen.



Once data has been stored on the diagnostic equipment,press the **Remote** key and then **Data Transfer**. Audiometric data will appear on the Pure Tone tab, tympanometric data will appear on the Tympanometry tab. As data is being transferred, the GSI AUD/TYMP dialog box will show "Reading Message" in the Audio Status or Tymp Status window. The following sections explain transfer of different types of data.

4.1. Curve Selection

The GSI AUD/TYMP dialog box allows you to select how information is displayed. Basically, use the **AC Curve** (Air Conduction Curve) section to route the Audiometers AC data to the **HTL** (Hearing Threshold Level), **MCL** (Most Comfortable Level) or **UCL** (Un-Comfortable Level). Bone conduction thresholds will be plotted on a separate curve, however the setup for bone conduction data is slightly different from audiometer to audiometer. The GSI Audio Tymp Module plots Forehead and Mastoid Bone Conduction data differently, so it is important to configure the driver to match your Audiometer's Calibration.

Contact your GSI Service Representative if you need to change from the factory default Mastoid to Forehead Bone Vibrator Calibration.

4.2 GSI 61 Short Record vs. Test Battery

The GSI 61 can transmit either single point information or the entire contents of a saved audiogram. When configured to transmit a 'GSI 16 Short Record' or 'GSI 61 Short Record', the GSI 61 sends the current state of the Audiometer. When configured to transmit a 'Test Battery Record', the GSI 61 sends the entire contents of the saved Audiogram screen.

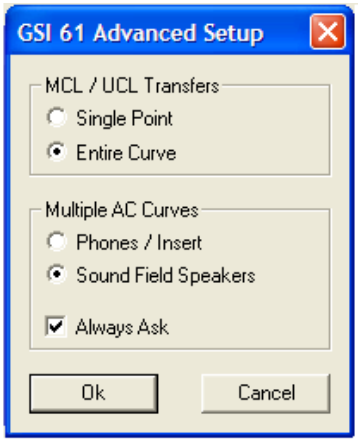
1. Turn **OFF** and open the GSI 61.
2. Set the following dipswitches to configure the audiometer for the desired transmission.

	GSI 16 Short Record	**GSI 61 Short**	**GSI 61 Test Battery**
S901-7	OFF	ON	OFF
S901-8	ON	OFF	OFF

3. Close and then turn **ON** the GSI 61.
4. Place the GSI 61 in Remote mode with the **Remote** push-button.

4.3 GSI 61 Multiple Air Conduction Curves

The Adv Setup button on the GSI 61 Curves dialog displays the **GSI 61 Advanced Setup** dialog:



Use the **Phones / Insert** and **Sound Field Speakers** selections to pick the data to accept when both Phone/Insert and Sound Field Air Conduction curves have been saved on the GSI 61 Display Audiogram. Select **Always Ask** to require the GSI driver to inquire which curve to accept each time the **Data Transfer** button is pressed.

4.4 MCL and UCL Curves

None of the GSI audiometers have the capability to tag Air Conduction curves as MCL or UCL. Use the **HTL**, **MCL** and **UCL** selections to route the Air Conduction curves to the proper Audiogram curves. The **Adv Setup** button on the **GSI 61** Curves dialog displays the **GSI 61 Advanced Setup** dialog. Select **Single Point** to accept the GSI 61 Audiogram Cursor location as the new MCL or UCL data point. Select **Entire Curve** to accept the GSI 61 Air Conduction curves (see Multiple Air Conduction Curves above) as the new MCL or UCL data curves.

4.5 Tympanometric Data

Data from the TympStar can be transferred in two ways. Individual tests on the TympStar can be transmitted by selecting **Remote** and **Data Transfer**, once the test is completed. To transfer an entire test battery, press **Page** on the TympStar, select **ALL** and then press **Remote** and **Data Transfer**. If Reflex Threshold data is present, but not Marked, you will be requested to return to the TympStar to mark any thresholds that you would like to transfer.

To Mark Reflex Thresholds on the TympStar

1. Press **Page** on the TympStar to view all of the saved tests.
2. Use the Up/Down arrows to move to the **Reflex Threshold** test pages.
3. Press the **Mark Threshold** softkey.
4. Use the arrow softkey to move from one reflex tracing to the next.
5. When the appropriate reflex tracing is highlighted, press **Mark Threshold**. An asterisk will appear under the reflex threshold value, denoting the Marked Threshold for that frequency. If more than one value is Marked, the Audio Tymp Module will accept the last marking as the threshold.
6. Press **Exit** to return to viewing the test results.

5. Equipment Communications

The GSI Audio Tymp Module for NOAH 3.1 is shipped with defaults that match the factory configurations of the GSI 10, GSI 16, GSI 61 and GSI 39 audiometers and GSI TympStar tympanometers (tympanometer instrument options should be set to **Summary** only). If modified from the factory defaults, ensure that your equipment communication switch settings match the GSI Audio Tymp Setup.

5.1. GSI 61

Factory Setup: 9600 baud, 8 data bits, 1 stop bit, no parity hardware (CTS/RTS) handshake, GSI 61 Test Battery data record and Mastoid bone vibrator.

5.1.1. Baud Rate

The transmission and reception baud rate is jumper selectable on the Remote Interface Option card. The baud rate has been factory set to **9600** baud. It is recommended that this baud rate be used for optimum performance. However, other baud rates may be selected by modifying the S1 switch settings as follows:

S1 - 3	S1 - 2	S1 - 1	Baud Rate
O	X	O	19200
O	X	X	600
X	O	O	1200
X	O	X	2400
X	X	O	4800
X	**X**	**X**	**9600**

O = ON (closed switch), X = OFF (open switch)

5.1.2. Data Bits / Parity

The number of Data Bits and the byte Parity is switch selectable on the Remote Interface Option card. The Data Bits / Parity has been factory set to **8 / NONE**. It is recommended that this setting be used for optimum performance. However, other Data Bits / Parity combinations may be selected by modifying the S1 switch settings as follows:

S1 - 5	S1 - 4	Data Bits / Parity
O	O	7 / SPACE
O	X	7 / EVEN
X	O	7 / ODD
X	**X**	**8 / NONE**

O = ON (closed switch), X = OFF (open switch)

5.1.3. Stop Bits

The number of Stop Bits and the byte Parity is switch selectable on the Remote Interface Option card. The Stop Bits has been factory set to **1 Stop Bit**. It is recommended that this setting be used for optimum performance. However, **2 Stop Bits** may be selected by modifying the S1 switch settings as follows:

S1 - 7	Stop Bits
O	2 Stop Bits
X	**1 Stop Bit**

O = ON (closed switch), X = OFF (open switch)

5.1.4. Flow Control

The Flow Control is switch selectable on the Remote Interface Option card. The Flow Control has been factory set to **CTS / RTS**. It is recommended that this setting be used for optimum performance. However, **XON / XOFF** may be selected by modifying the S1 switch settings as follows:

S1 - 6	Stop Bits
O	XON / XOFF
X	**CTS / RTS**

O = ON (closed switch), X = OFF (open switch)

Installations that do not have all handshaking lines available may select not to use the data handshaking capability provided by installing the following jumpers at the GSI 61 interface point:

1. Connect RTS to CTS
2. Connect DSR to DTR

5.1.5. Data Record Type

The remote Data Record Type is switch selectable on the Main CPU Board. The Data Record Type has been factory set to **GSI 61 Test Battery**. It is recommended that this setting be used for optimum performance. However, other Data Record Types may be selected by modifying the S901 switch settings as follows:

S901-8	S901-7	Data Bits / Parity
O	X	GSI 16 Short
X	O	GSI 61 Short
X	**X**	**GSI 61 Test Battery**

O = ON (closed switch), X = OFF (open switch)

5.2. GSI 39

Factory Defaults: 115200 baud rate, 8 data bits, 1 stop bit, no parity, hardware (CTS/RTS) handshake.

5.2.1. Baud Rate

The baud rate has been factory set to **115200** baud. It is recommended that this baud rate be used for optimum performance. However, other baud rates may be required depending on the computer hardware. Remote settings are software selectable in the GSI 39. The following steps explain how to change these settings:

1. On the GSI 39, press **PROG,** then turn the knob to move the cursor to **DATA XFER CONFIG** (with the cursor on the arrow, use the **PAGE** mode to advance to the next screen).
2. With the cursor on **DATA XFER CONFIG**, press **PAGE** mode again to open the **DATA TRANSFER CONFIGURATION** menu.
3. Note that no setting should need to be changed on the GSI 39.

5.2.2. Data Bits / Parity

Data Bits/Parity defaults to **8/NONE**.

5.2.3. Stop Bits

Number of Stop Bits defaults to **1 Bit**.

5.2.4. Flow Control

Flow Control **CTS/RTS** defaults to **ON**.

5.3. GSI TympStar

Factory Defaults: 9600 baud, 7 data bits, 2 stop bits, even parity, hardware (CTS/RTS) handshake.

5.3.1. Baud Rate

The baud rate has been factory set to **9600** baud. It is recommended that this baud rate be used for optimum performance. However, other baud rates may be required depending on the computer hardware. Remote settings are software selectable in the TympStar. The following steps explain how to change these settings:

4. On the TympStar, press the **ETF** hard key.
5. Press **Return** to reveal a sub-menu.
6. Select the **Instrument Options** softkey.
7. Select the **Remote Settings** softkey. Match all of the remote settings of the TympStar to the port settings from the computer.

5.3.2. Data Bits / Parity

Data Bits/Parity defaults to **EVEN**.

5.3.3. Stop Bits

Number of Stop Bits defaults to **2 Bits**.

5.3.4. Flow Control

Flow Control **RTS/CTS** defaults to **ON**.

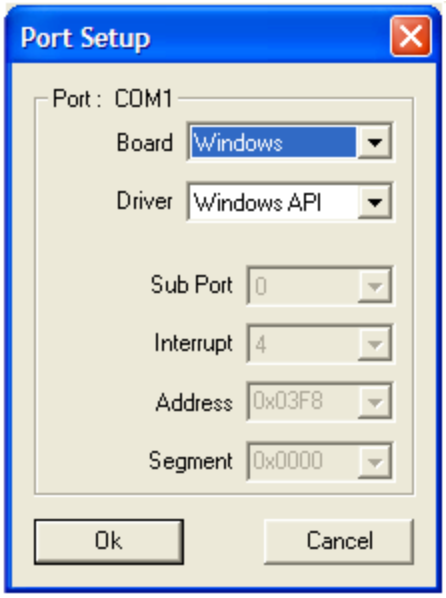
6. MultiPort Serial Cards

6.1. Overview

The standard computer supports only 1 or 2 RS-232 communication ports and 2 USB ports. The number of available RS-232 ports can be expanded to as many as 16 ports using MultiPort Serial Cards. The number of USB ports can be expanded using a USB hub. This allows multiple devices to be simultaneously connected to the computer without requiring a switch box.

6.2. Port Setup

1. Install the MultiPort card or USB hub in accordance with the Manufacturer's Instructions.
2. From the **GSI Audio Tymp Setup** dialog box click the **Port Setup** button to display the **Port Setup** dialog box.



3. Select the **Board** and **Driver** installed.
4. Select the **Sub Port**, **Interrupt, Address** and **Segment** specified in the Manufacturer's Installation Guide.

7. Trouble Shooting and Helpful Hints

Most errors generated by the GSI Audio Tymp module during the transfer of test data are caused by mismatched port settings between the software module and the test instrument. An "Invalid Port" error can occur if a serial COM port that does not exist in the PC is selected in the <bold>Setup Equipment<\bold> dialog box. The error can also occur if the same COM port is selected for both the audiometer and tympanometer. If you are able to start the Instrument Driver, then a valid COM port was selected, although it may or may not be the COM port connected to the test instrument.

Once the correct COM port is selected, other communication errors may occur during the transfer of test data from the instrument if the port settings of the COM port such as baud rate, data bits, parity, or flow control do not match the hardware configuration of the test instrument. To verify the port settings of a particular test instrument, please refer to the user manual for that test instrument. To verify that a PC serial port or test instrument port is functional or correctly configured, you can display the raw test data transmitted from the instrument in a terminal program such as HyperTerminal. Please refer to the Troubleshooting section of the GSI Audio Tymp manual for details on how to perform this test.

For GSI technical support, pleas call our toll free number, 800-700-2282 or email us at gsiservice@grasonstadler.com.

7.1 Windows® Terminal Program

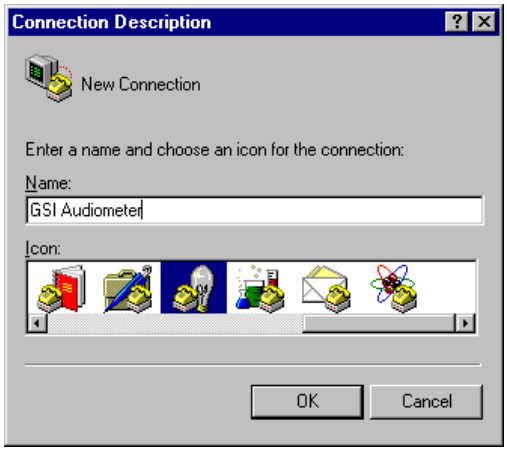
If communication between the diagnostic equipment and the computer is a problem, ensure that the units are communicating using the HyperTerminal Program.

1. Turn off the diagnostic equipment (audiometer or tympanometer).
2. Connect the diagnostic equipment to the PC. The cables and supplied with your equipment and the GSI Audio Tymp Module should work without modification.
3. Verify the equipment communication settings (see the section on Equipment Communication parameters.) The factory defaults should be used in most cases. Write your settings here, if different.

Defaults	GSI 10	GSI 16	GSI 61	TympStar	Your Settings
Baud Rate	9600	9600	9600	9600	
Data Bits/Parity	7/EVEN	7/EVEN	8/NONE	7/EVEN	
Stop Bits	2	2	1	2	
Flow Control	CTS/RTS	CTS/RTS	CTS/RTS	RTS/CTS	

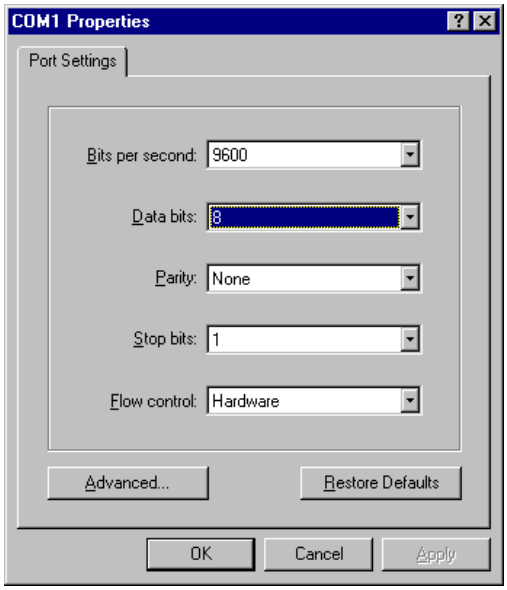
4. Turn on the diagnostic equipment.
5. Start HyperTerminal program: Click **Start | Programs | Accessories | Communication |HyperTerminal**.

6. To create a new connection, enter the name **GSI Audiometer (or Tympanometer)**, then click **OK.**

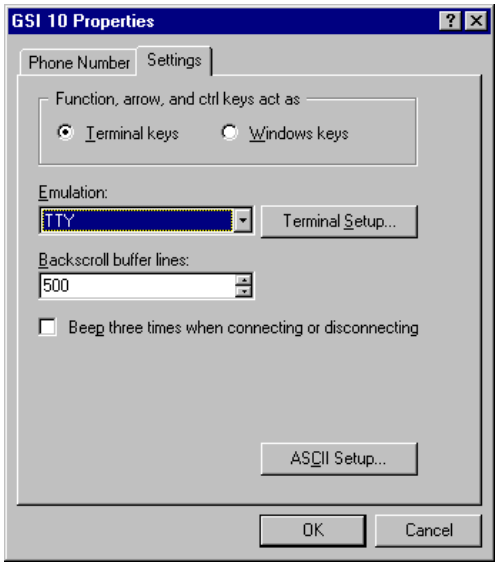


7. Set **Connect using** to 'Direct to Com 1' and click **OK**.

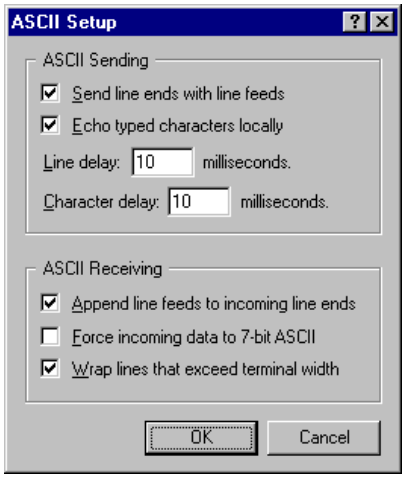
8. Select **File | Properties**, then the **Phone Number** tab. Click the **Configure** button, modify COM1 port settings to match your equipment and then click **OK** to save the changes (note that CTS/RTS is equivalent to Hardware Flow Control).



9. Select the **Settings** tab, set **Emulation** to **TTY**.



10. Click the **ASCII Setup** button. Select **Send line ends with line feeds**, **Echo typed characters locally**, **Line delay** = 10 and **Character delay = 10**, then click **OK**.



11. Press **REMOTE** and then **DATA TRANSFER** on the diagnostic equipment (do NOT press any other keys.)
12. You should see something *very close to* the following (where '°' denotes a space):

GSI 10: GSI 10 Short Record:

"**:**101001002520000003°°000-100°°100000°°0048"

GSI 16: GSI 16 Short Record:

"**:**101000002520000003°°000-1000°1000000000E7"

GSI 61: Configured for GSI 16 Short Record:

"**:**101000002520000003°°000-1000°100000000067"

GSI 61: Configured for GSI 61 Short Record:

"**:**501000002520000003°°000-1000°1000°°°°0°°0°°0DB"

GSI 61: Configured for GSI 61 Test Battery Record:

"**:**6800080008000800080008000800080008000800080008000800080008000800080008
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0008000800080008000800080008000800080008000800080008000800080008000800080008
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13. If you do not see anything like this, restart from **step 7** and try COM2, COM3, etc. .
14. To test if the Audiometer can receive, type in this sample command (where '°' denotes a space)::
    GSI 10: "**:**525°<enter>"
    GSI 16: "**:**5251<enter>"
    GSI 61: "**:**5251<enter>"
15. If the equipment responds as outlined in step #12, then it is communicating correctly. Close the Terminal or HyperTerminal program and restart the NOAH program.
16. Open the GSI Audio Tymp Module, select **Tools | Setup Equipment**.
    Select the **GSI Instrument Driver**.
    Click the **Setup** button.
    Select the **communications Port** and **parameters** that match the working setup.

7.2 Sound Field Symbols

If you have saved Sound Field symbols on the GSI 61 Display Audiogram screen and they are not transferring to the GSI Audio Tymp Module as described, or they are transferring but not the correct symbol, try this:

1. In the GSI Audio Tymp Module, close the Audio driver by selecting **GSI Instrument Driver** in the Audiogram menu item.
2. Select **Tools** | **Global Options**.
3. Highlight **SF**, click **Edit**.
4. Double-click on the **Left unmasked symbol**, and select a new symbol, usually "S". Do the same for the **Right unmasked**, **Left no response** and **Right no response** symbols.
5. Click **OK** to close the Test Properties dialog box.
6. Click **Apply** on the Global Options dialog box.

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8. Language Translation Option

8.1. GSI Audio Tymp Module Translation File

The translation text file, called **translate.txt**, allows the User to translate the text phrases, operational messages, and error messages displayed on the screen for the GSI Audio Tymp Module. This includes the GSI Audio Tymp Setup screens as well as the operational screens.

This use of this file is completely optional. The GSI Audio Tymp Module can operate without this file but all text phrases and messages will be in English.

You can translate as few or as many phrases and messages as you like.

If the translation file does exist, it must reside in the same directory as the GSI Audio Tymp Module. The default pathname is: **c:\program files\grason-stadler\GSI Audio Tymp Module\translate.txt**

To enter a translated text phrase or message: Use Windows Notepad or Wordpad to edit this file, enter the text ID number at the beginning of a line, followed by at least one space character, then enter your translated text phrase or message. All of the default status messages are shown below, including error messages.

Translation Text ID numbers are in a range from 5000 to 5999 inclusive.

A ';' (semi-colon) character is used for a comment line.

For example: To change the English words "Ok" and "Cancel" to French "Oui" and "Annuler", the entries in the translation file will look like this:

5000 Oui
5001 Annuler

8.2. Dialog Text

5000 Ok
5001 Cancel
5002 Adv Setup
5003 Port Setup
5004 Port

5100 GSI AudiLink Setup
5101 Audiometer
5102 Model
5103 Communications
5104 Baud Rate
5105 Data Bits / Parity
5106 Flow Control
5107 Stop Bits

5200 GSI 10/16 Advanced Setup
5201 Bone Vibrator Position
5202 Forehead
5203 Mastoid

5300 GSI 61 Advanced Setup
5301 MCL / UCL Transfers
5302 Single Point
5303 Entire Curve
5304 Multiple AC Curves
5305 Phones / Insert
5306 Sound Field Speakers
5307 Always Ask
5320 Pick AC Curves
5321 Multiple AC Curves transferred. Choose data to accept.

5401 Board
5402 Driver
5403 Sub Port
5404 Interrupt
5405 Address
5406 Segment

5501 AC Curve
5502 HTL

5503 MCL
5504 UCL
5505 Audio Status
5506 Tymp Status

5600 Reading Message
5601 Port Setup Error

8.3. Communication Error Messages

5700 No error
5701 Unrecognized or invalid input character in the data record
5702 Invalid input record size
5703 Invalid input record Type code
5704 Invalid input record Function code
5705 Invalid input record Function sub-code
5706 Invalid input record Timing Period
5707 Invalid input record Frequency Data
5708 Invalid input record dBHL Data
5709 Invalid machine conditions for remote compatible data
5710 Generic NAK in response to an invalid input record request
5711 Invalid Start-Of-Record
5712 Overrun of UART FIFO
5713 Invalid Speaker Amp selection
5714 HL limited by machine conditions and is set to closest possible value

5800 Invalid Driver Type
5801 Invalid String Delimiter
5802 Test Type must be TONE
5803 Test Type must be AUTO-HL
5804 Invalid Output Record Type
5805 Corrupt Error Message: Resend
5806 Lost Characters: Resend
5807 Invalid CheckSum: Resend
5808 Invalid Characters: Resend
5809 Frequency not supported by NOAH
5810 Transfer while HL flashing: Resend
5811 Error on multi-port processor board, Changing to Windows board type

5900 RS232 no error
5901 RS232 buffer not set or buffer changed
5902 RS232 port not active

5903	RS232 transmit buffer full
5904	RS232 receive buffer empty
5905	RS232 port syntax error
5906	RS232 invalid buffer size
5907	RS232 invalid port
5908	RS232 handler changed
5909	RS232 invalid baud rate
5910	RS232 invalid parity
5911	RS232 invalid data length
5912	RS232 invalid # stopbits
5913	RS232 invalid protocol
5914	RS232 IRQ changed
5915	RS232 port changed
5916	RS232 invalid threshold
5917	RS232 invalid IRQ
5918	RS232 interrupts not enabled
5919	RS232 invalid break syntax
5920	RS232 fatal error
5921	RS232 CTS error
5922	RS232 Invalid RS232 address
5923	Environment variable not set
5924	Error issuing IOCTL call
5925	Error issuing atexit cleanup
5926	Error mapping device for dir calls
5927	Error opening Device
5928	Error allocating memory
5929	Error on external micro
5930	Card changed error
5931	Card type error
5932	Not supported
5933	Card command buffer full
5934	Invalid parent PCB
5935	No device for this port
5936	Unknown error
5937	Busy
5938	No more timers available
5939	INT 14H vector changed
5940	Timer vector changed
5941	DPMI error
5942	No windows buffer or too small
5943	No asynchronous resources left
5944	No timer resources left

5945 Out of other resources
5946 File I/O error
5947 Hardware memory exceeded 64K
5948 VXD/Kernel Driver not loaded
5949 Could not start a thread
5950 NT VDD CDRVVDD.DLL not loaded

DO NOT PRINT THIS SHEET

REV	ECO	DESCRIPTION	DATE	APPROVED
A	G10-023	UPDATED WITH NEW INFO	08-27-10	JEP
B	G10-046	Updated size 8.5X11 and borders	26-Oct-10	PMD

Notes:

1) **See drawing 1002-0105 for manual printing specifications**
2) DO NOT PRINT LAST SHEET OF MANUAL

Title:

GSI Audio Tymp Module for NOAH3 User's Manual

Prepared by	Date:	

Approved by	Date:	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF GSI. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF GSI IS PROHIBITED.
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