

SounderSuite - USB

Windows Installation and Firmware Upgrades

Supports Software Installer Package #: D429-04216

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1 INTRODUCTION

1.1 About this manual

This manual provides installation and upgrade details for the software package provided with a 1600 or 3200 Series Echosounder. It provides brief descriptions of the Windows software applications and the embedded firmware. It explains what needs to be installed for a newly delivered system and what needs to be done to upgrade an existing system.

1.2 Technical Support

For technical support or to report problems please contact your local representative or:

Technical Support
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2 SOFTWARE DEFINITIONS

2.1 Overview

Virtually every aspect of the USB Echosounder's functionality is defined and controlled by software. This software includes the "firmware" which resides in non-volatile memories within the echosounder itself, and various Windows-compatible support applications which run on the host PC.

2.1.1 Firmware

The term firmware refers to the software which resides in nonvolatile memory within the Echosounder modules. Upgrades and revisions are distributed periodically as ".bin" files which can be re-programmed into the echosounder module in the field by the user.

2.1.2 Windows Support Applications

There are various Windows applications provided with the USB Echosounders for different support purposes. All the programs are Windows compatible, and are installed with a standard Setup.exe process.

2.1.2.1 EchoControl Server (EchoControlServer.exe)

This program is an independent Windows application that interfaces to the Echosounder via a USB interface. The USB interface must be connected and functioning for this application to be usable. It provides the interconnection between the echosounder hardware on the host PC to the client application on the same PC or another one on the same network. It also provides the interfaces for the peripheral device inputs. This application must be active on the host PC for the client application to communicate properly with the echosounder hardware.

2.1.2.2 EchoControl Client (EchoControlClient.exe)

This program is an independent Windows application that interfaces to the server application via TCP/IP network communications. The server application must be running and successfully connected to the sounder for this application to be usable. It provides scrolling echogram image displays with echosounder operating controls, and controls for data logging and recording functions.

2.1.2.3 PostSurvey (PostSurvey.exe)

This program is an independent Windows application that provides the user playback and printing capabilities for the echogram data recorded by the EchoControlClient application.

2.1.2.4 Hypack Device Driver (EchoHypackDLL.dll)

This program is provided as a device driver to Coastal Oceanographics HYPACK for Windows hydrographic survey software, in the DLL (Dynamic Link Library) format required by HYPACK. This program is only useful to HYPACK for Windows users. It uses DDE data transfer protocol to interface with the EchoControlClient application.

2.1.2.5 Firmware Loader (FirmwareLoader.exe)

This program is a very simple Windows interface program. It communicates with the echosounder through the USB port on the server host PC. It provides simple firmware upgrade capabilities.

3 INSTALLATION / UPGRADE GUIDELINES

3.1 Initial Installation

A newly delivered echosounder has the necessary firmware already programmed into it. The user only needs to load the Windows support applications supplied on the CD-ROM. The CD-ROM contains a Setup.exe Windows installation program that creates the directory and copies all the files onto the user's hard disk. See Chapter 4 for a complete description of the installation process.

3.2 System Upgrades

Occasionally, a system that has already been operating out in the field will be provided an upgrade software package to provide additional operating features not available with the original software. If the Echosounder's firmware is not at the proper revision, it will need to be upgraded. See Chapters 4 and 5 for detailed descriptions of the installation processes.

NOTE: When performing the upgrade, always perform the Windows upgrade first, as this will extract the necessary ".bin" file onto the hard disk required to proceed with the firmware upgrade.

4 PC SOFTWARE INSTALLATION

4.1 Setup Procedure

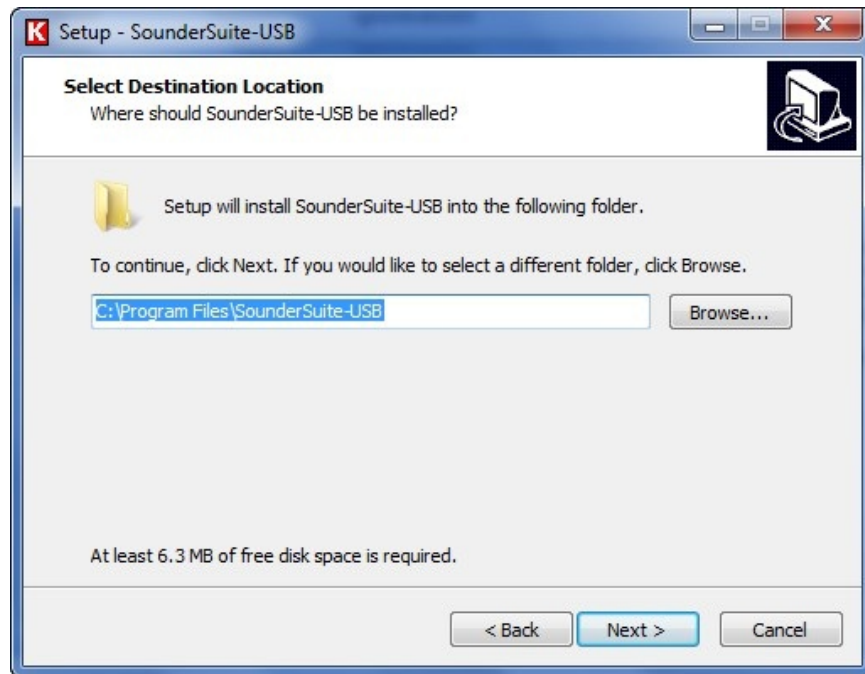
The CD-ROM provided either with a new system or in an upgrade package contains a typical Windows Setup (SounderSetup.exe) installation program. For most Windows systems, this Setup executable will automatically run (autorun) when the CD-ROM is loaded in the drive. If it does not start automatically, simply run the file SounderSetup.exe.

Sometimes the upgrade package is provided by an e-mail or weblink download. In that case, the installer package filename will incorporate the release serial number: ie K206-0110-USB.exe. This is still a standard Windows executable and can be run the same as a Setup.exe file.

When the installer program is run, it displays a number of information and configuration prompts to allow the user to customize the installation process if desired. Customization of the installation should be undertaken by advanced users only. The normal installation process proceeds as follows:



Welcome to the SounderSuite-USB Setup Wizard: Simply click Next to continue.



Select Destination Location: Default: C:\Program Files\SounderSuite-USB

If there are any batch files for managing multiple configurations, they will be hardcoded to this folder for now. It is recommended that only advanced users modify this option.

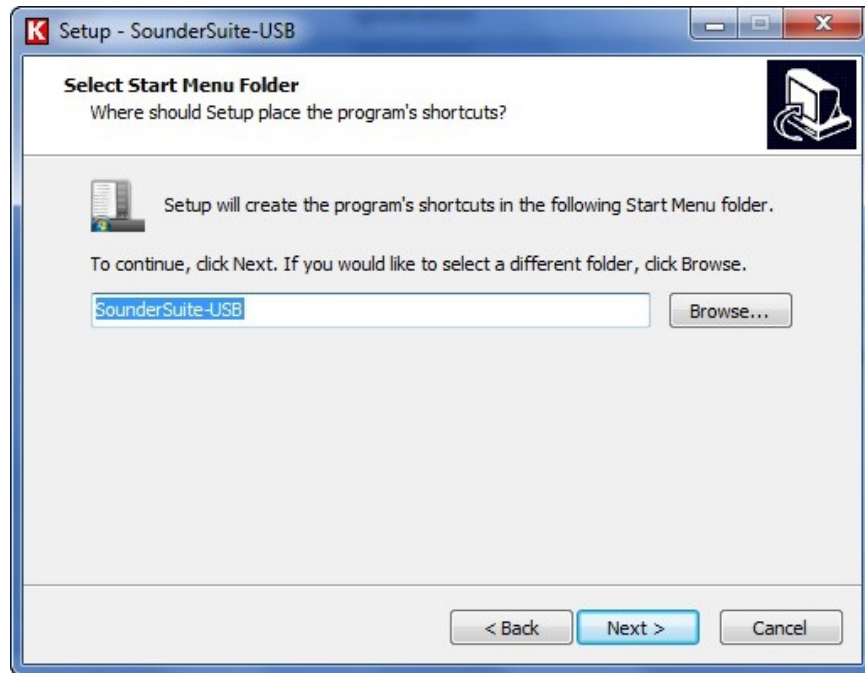


Setup Components: Default: Stand-alone

There are three options available for this item. The required installation depends on the usage of the sounder. The simplest is to load the recommend default **Stand-alone** and run the sounder from the same PC it is connected to (host PC). It is

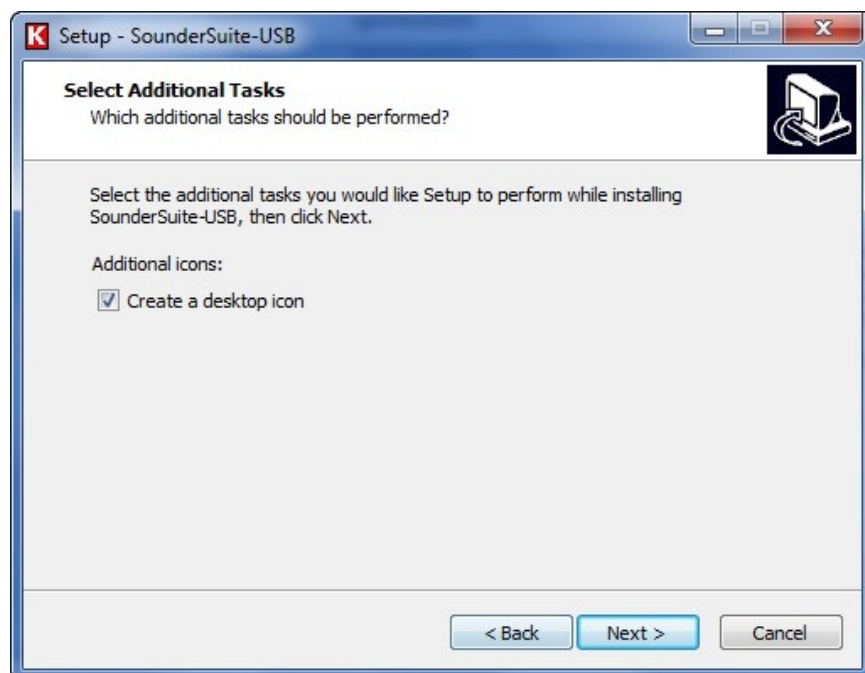
possible to connect the sounder to one PC and control it from another. That's where the **Server-side** (PC connected to the sounder) and **Client-side** (another computer on the network) can be used. They only load the application components required for each side of the operations.

For now, this document assumes that the echosounder is controlled from the same PC to which it is connect (**Stand-alone**).



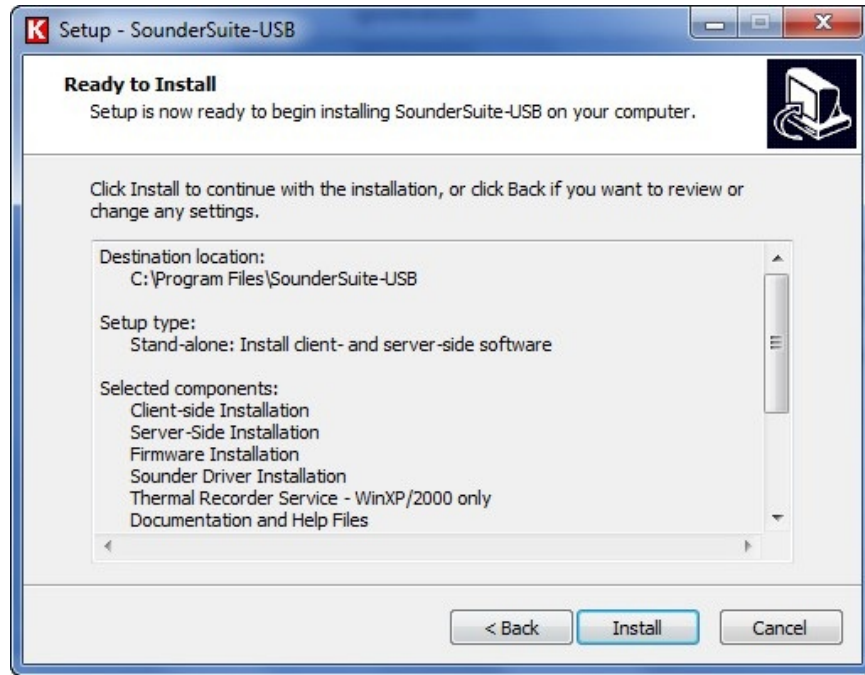
Select Start Menu Folder: Default: SounderSuite-USB

This can be modified to any preferred value. Please note that all the following documentation assumes that the defaults have been used.



Select Additional Tasks: Default: Desktop Icons

This can be modified to any preferred value. Please note that all the following documentation assumes that the defaults have been used.



Ready to Install: Last chance to cancel before actual installation is performed. Click Next to proceed with the installation. The installer will proceed to copy the application executables, driver setups, firmware files, and support documentation in PDF format. After completing these tasks, a final screen will appear indicating if the setup completed successfully.



If the installation process is being performed for a new unit, the process is now complete. The sounder will have been shipped with the appropriate firmware revisions. If this is an upgrade package, the firmware in the sounder will probably need to be upgraded as well. Please see Chapter 5 for detailed information regarding the firmware upgrade.

Once the installer has completed and restarted, you should see a series of new icons on the desktop. These icons are also available in the Program Group accessible from the Start button.

4.1.1 Special Notes regarding Windows 2000/XP/Vista/7

Because the installer package needs to install driver services and class components, the installation must be done using an administrative account.

4.2 Driver Installation for Single-Channel Modules

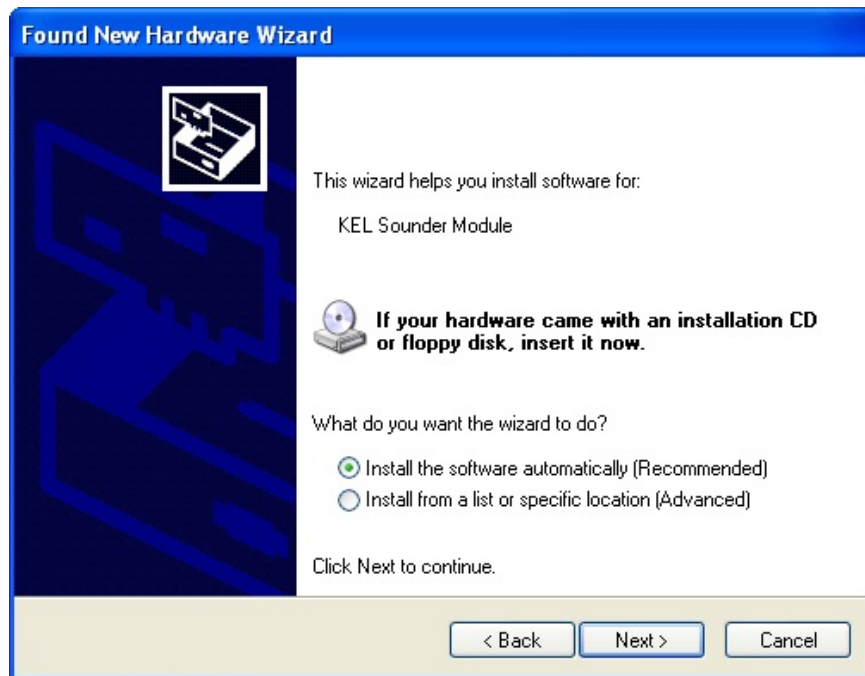
When the Windows software installer was run, it installed all the necessary driver files to support the sounder. In the ideal situation, Windows will automatically recognize the new driver and load the driver by itself when it detects the sounder's internal modules. This is not always the case, though, and the user may need to provide additional direction for Windows to successfully complete the loading of the hardware driver.

4.2.1 Recommended Installation

The first time the sounder is connected and powered on, Windows should indicate that it sees new hardware called a Single-Channel Module and should activate the New Hardware Wizard.



Welcome to the Found New Hardware Wizard: The wizard will ask if it should access the internet to search for the driver for the module. The driver has been loaded on the hard drive so the user should select “**No, not this time**” and click Next.



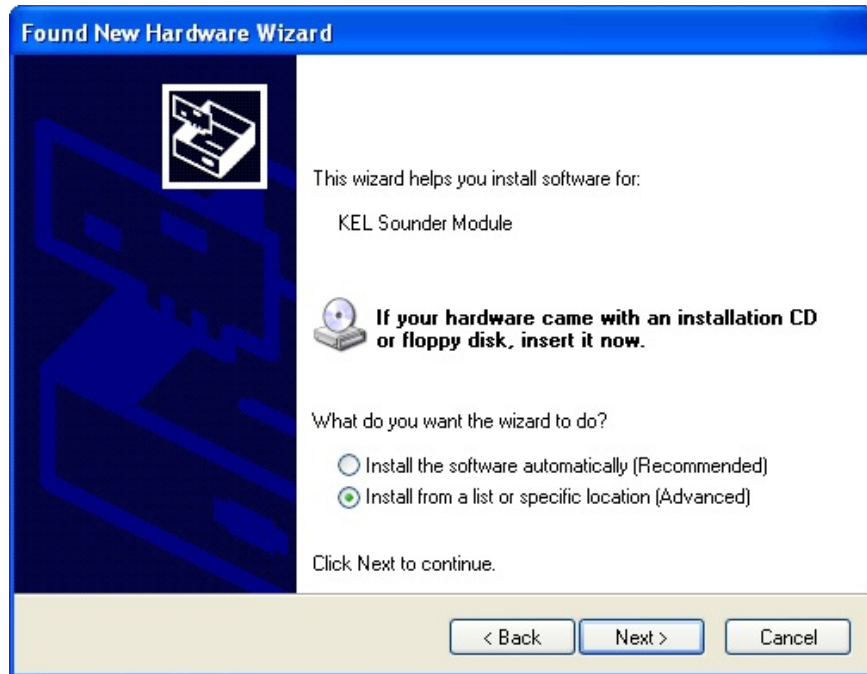
The next dialog asks if the software should be installed automatically (Recommended) or from a list or specific location (Advanced). Normally, the user should be able to select the automatic (Recommended) option, given that the installer application will have already loaded all the necessary files. If it was successful in doing so, the wizard should find the driver files and loaded them without any user assistance.



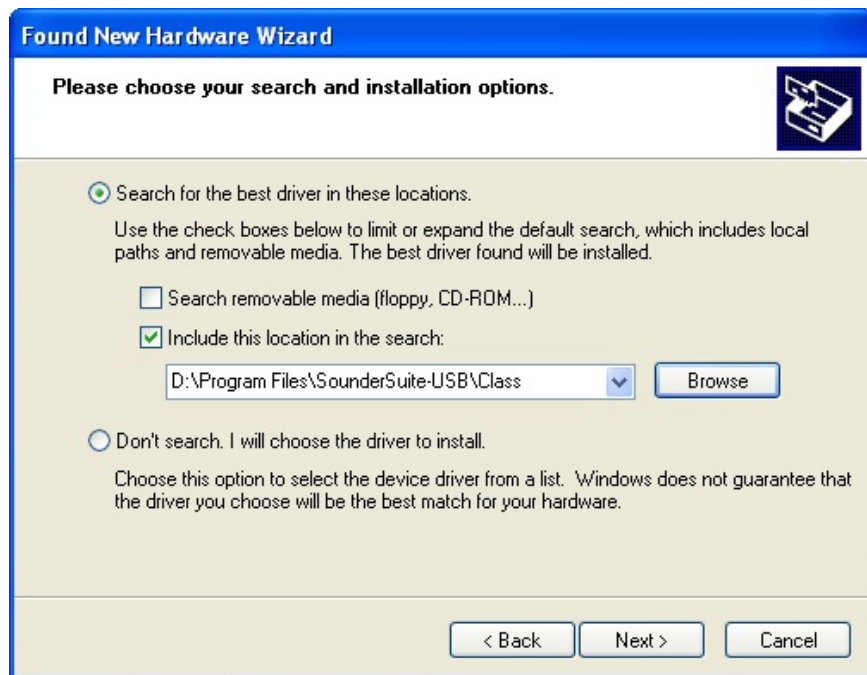
Once it has completed, it will indicate whether or not it was successful in installing the software for the module. If it was the user can simply click on **Finish** to continue. If the sounder has more than one channel, this step needs to be repeated for each

channel module detected in the sounder.

4.2.2 Advanced Installation



Sometimes, the driver file loading performed by the installer application is not successful in indicating to the Windows operating system where the driver files are actually located. In this instance, the user may need to perform an Advanced driver installation instead of the Recommended.



Proceeding with the Advanced installation, the user can browse to the appropriate folder on the hard drive where the

necessary files are stored. In a default installation, this would be the folder C:\Program Files\SounderSuite-USB\Class. As for the Recommended installation, the operating system will load the driver files located in the indicated folder for the module.



Once it has completed, it will indicate whether or not it was successful in installing the software for the module. If it was, the user can simply click on **Finish** to continue. If the sounder has more than one channel, this step needs to be repeated for each channel module detected in the sounder.

5 FIRMWARE INSTALLATION

The firmware installation procedures are only required for system upgrades. Newly delivered systems do not need to have any firmware loaded. Upgrades are performed when new capabilities are added to the echosounder's functionality. Sometimes only the Windows support software is enhanced and firmware remains unaffected. Often the Windows program will indicate if a newer version of firmware needs to be loaded; in other instances, there will be instructions provided with the installation package indicating if an update is required.

A single echosounder may be comprised of a number of hardware channel modules. Upgrading the echosounder involves downloading new firmware into these individual modules. Typically, there will be only one type of module and only one ".bin" file will be required. In those rare cases where there is more than one, a readme file will be included to indicate which .bin is required for which hardware module.

5.1 Upgrading the Firmware

The FirmwareLoader application loaded onto the PC by the installer package provides the interface necessary to upgrade the firmware in the sounder channel modules. The steps to upgrade the hardware modules are as follows:

- Step 1.** Exit any open SounderSuite windows applications.
- Step 2.** Power cycle the sounder. The modules will not be able to initiate the firmware loading operation if they have already run a ping cycle.
- Step 3.** Run the Firmware Loader application available under the Start -> All Programs -> SounderSuite-USB program folder. It should detect the modules in the sounder. If not, it will indicate the appropriate error condition.
- Step 4.** In Firmware Loader, select **Upgrades -> Load DSP Firmware**. This should cause the application to display a dialog box labelled **Select Sounder Hardware**. The drop down list indicates the modules detected.
- Step 5.** Select a module to update.
- Step 6.** The application should now provide a dialog box for opening the firmware file. Ideally, it will already be looking at the appropriate folder; if not, browse to the folder **C:\Program Files\SounderSuite-USB\Firmware**. Select and open the desired .bin file.
- Step 7.** The application will start the transfer of the firmware to the module. Once it is complete and has passed a validity check, a dialog will appear asking for confirmation that you do want to reprogram the firmware contents in the module. Click on Yes to proceed.
- Step 8.** The application will display the programming status as it proceeds and indicate once it is completed if it was successful or not.

WARNING: Do NOT turn off the power to the sounder while the programming step is active or the memory in the module could be permanently damaged and require return to the factory for reprogramming.

- Step 9.** Repeat steps 4-8 for the next module.

The Firmware Loader simply replaces the contents of the on-board boot memory. The new firmware is not actually running

yet. The sounder will need to be rebooted to run the new firmware.

Step 10. Click Close and exit the Firmware Loader application.

Step 11. Power cycle the sounder.

At this point, technically the process is complete but if you wish to verify that the firmware load was completely successful a simple check is in order.

Step 12. Run the Firmware Loader again.

Step 13 Select the **Help** menu option **Sounder Info**. This will bring up a **Module Summary** dialog that shows one tab for each module detected. Listed on this tab is information identifying the module and the firmware detected running in it.