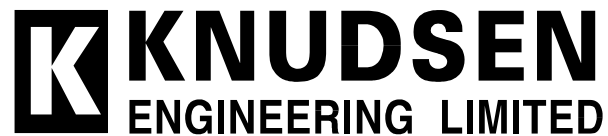


320 SERIES ECHOSOUNDER

SERIAL UPGRADE UTILITY SOFTWARE MANUAL

Supports Software: UpgradeUtility.exe: D40-02346 V2.00

D10 - 02278
Revision 2.0
November 4, 1999



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1 INTRODUCTION

1.1 About this manual

This manual provides information about the Windows-based Serial Upgrade Utility program, Part #: D40-02346, UpgradeUtility.exe. This program is designed to communicate with the 320 Series Echosounder's main processing module and printer control module via their serial ports strictly to perform firmware upgrades.

1.2 Technical Support

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

Technical Support
Knudsen Engineering Limited
10 Industrial Road
Perth, Ontario
K7H 3P2

Voice: (613) 267-1165 8:30 am to 5:00 pm E.S.T. Core Hours
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E-Mail: support@knudsenengineering.com
WebSite: <http://knudsenengineering.com/>

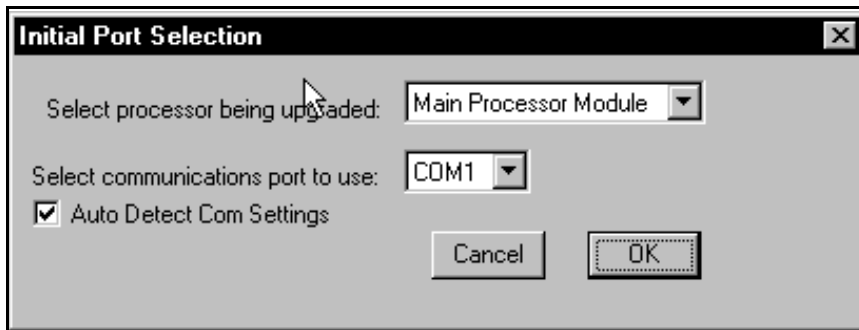
2 OPERATING INSTRUCTIONS

2.1 Overview

The Serial Upgrade Utility, UpgradeUtility.exe, is a specialized Windows serial communications program designed to link a PC to a 320 series echosounder via the sounder's COM 3 serial monitor port. It also links to a 320M series echosounder's thermal printer via its specialized serial com port. This application is designed to provide the user with a standard method for performing firmware upgrades on both modules.

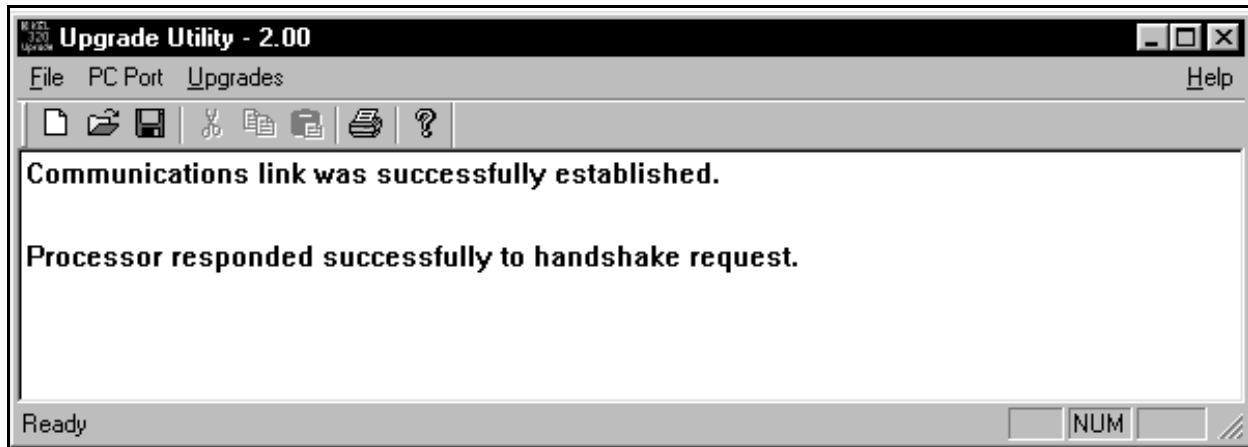
2.2 Description

When the program is invoked, it brings up a dialogue box requesting information from the user about what processing module to upgrade, the PC serial port to be used to establish the communications link, and, for the Main Processor module, whether to let this application auto-detect the processor's serial com port settings.



Once the user selects and accepts particular communication settings, the program first confirms that it can initialize the PC serial port. If port initialization fails, the user will be informed of the failure and the detected fault. Most commonly, the serial port initialization fails because some other program/device is already using the port.

If PC serial port initialization passes and auto-detect is selected, the program starts to scan for the actual serial port configuration settings on the echosounder. It starts with the last configuration stored in the program's main INI file, assuming that the last settings should still be correct. If these settings are no longer correct (PC is now connected to a different sounder perhaps), the program starts to scan all possible combinations of settings supported by the echosounder, starting at the highest baud rate first.



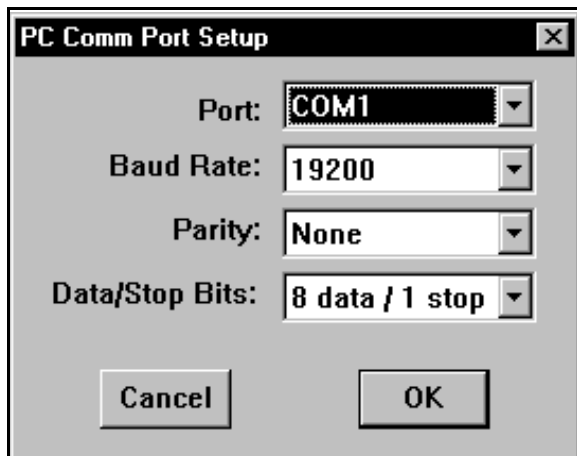
Once serial communications have been established and basic handshaking has been accomplished, a window pops up with four control groups on the main menu, and a blank display area used for communications status messages.

2.3 File

2.3.1 Exit

The user can terminate the application using the **Exit** command. If the Main Processor module was being upgraded, the current serial port configuration settings are saved in the main program INI file and used as a starting reference the next time the application is invoked for a Main Processor upgrade.

2.4 PC Port



The **PC Port** option pops up a dialogue box that allows the user to modify the desired serial com port to use on the host PC and the communications settings to be used by the selected port. The echosounder's Main

Processor module is shipped with the settings at the following defaults: 19200 baud, no parity, 8 data bits, 1 stop bit. The Printer Processor module's com port settings are permanently fixed at: 38400 baud, no parity, 8 data bits, 1 stop bit. Clicking on **OK** accepts the current PC port settings, and the program will initialize the port to the selected settings. Pressing **ESC** or clicking on **CANCEL** eliminates the changes, and restores the original settings.

2.5 Upgrades

2.5.1 Download Tag

The **Download Tag** option is used to send the firmware upgrade file (always a ".tag" filename) to the processor module. The file selection box that pops up lets the user select the desired tag file to be downloaded to the module. Once a file has been selected by the user, the program downloads it to the module's temporary memory over the serial connection. The transfer time is dependent on the baud rate of the communications link and the size of the tag file, but generally it takes about two or three minutes.

NOTE: This command simply loads the new firmware into the processor module's temporary memory. If the echosounder were powered down after this step, the new firmware would be lost and the old firmware would run on power-up. Proceed to the **Program PS** step to store the new firmware permanently in the sounder.

2.5.2 Initialize NVM

This option is only available if the application is being used to upgrade the sounder's Main Processor Module. It loads default parameter values into the NVM (non-volatile memory) on the MPM.

An **Initialize NVM** can be executed at any time to restore all the Main Processor Module's operating parameters to factory default settings.

NOTE: This will cause all previously user-selected parameter values to be lost.

2.5.3 Program PS

The **Program PS** option is needed after a **Download Tag** command has been performed to program the new firmware permanently into the echosounder's FLASH eproms. If a new tag file has been downloaded, and the echosounder is powered down before a **Program PS** command has been performed, the new firmware is lost and the echosounder will power back up with the old firmware.

Program PS causes the program code, which has been downloaded into program SRAM memory on the Main Processor Module, to be copied into FLASH memory (non-volatile program memory).

2.5.4 Program Tx

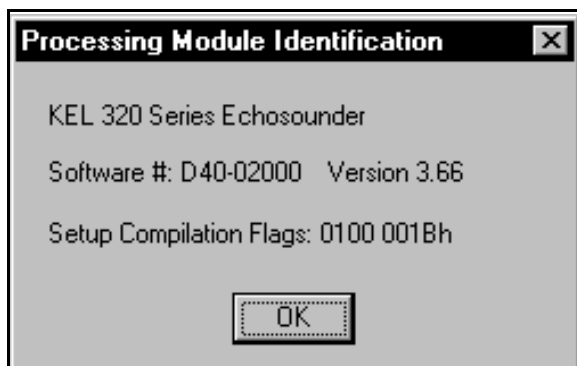
This option is only available if the application is being used to upgrade the sounder's Main Processor module.

The **Program TX** option is needed after a **Load Tag** command and a **Program PS** command have been performed to program the transmit waveform data permanently into the echosounder's FLASH eproms. If this command is not executed after a new tag file has been loaded and programmed, the system may not perform properly, since the old transmit waveform data in the transmit flash eprom may not correspond correctly with the new firmware.

2.6 Help

The **Help** menu provides access to two options that provide the user with system configuration information that is most useful when contacting the factory for technical assistance. There are no other help features implemented yet.

2.6.1 Identification



This option pops up a dialogue box that reports the system information read from the echosounder's processor module when the program was invoked and initiated communications with the module. It reports the module's sign-on message and the firmware part number, version, and compilation configuration loaded in the module. The Main Processor module sign-on message is "KEL 320 Series Echosounder". The Printer Processor module sign-on message is "320M Echosounder Printer".

The setup compilation flags are merely an indicator of the particular code options compiled into a user's specific system. This information is really only useful to KEL personnel, and it is helpful if it can be provide when user's contact the factory for assistance.

2.6.2 About Upgrade...



The **About Upgrade...** menu item brings up a simple dialogue box stating the name of the PC software program, the KEL part number for the program and the latest revision number, and technical support contact information.