

Wohler S8 and E8 3G Series Update Procedure

AMPx-x8 Series Software Upgrade Part Number 846007, Revision K

Overview

This procedure covers all AMP1, AMP2, S8, E8, and D8 units EXCEPT those manufactured prior to the addition of 3G capability. This document covers the update of the main, Dolby, and SDI processing boards. You must follow these instructions carefully. Failure to do so may result in a unit that will not function.

This document is divided into several procedures. Some sections may or may not apply to your unit, depending upon the options and boards installed. Please pay careful attention to the Pre-check header within each procedure to correctly determine if you need to follow the instructions within that procedure. The procedures in this document must be followed in the order in which they appear.

Text in red indicates areas where mistakes are often made. Please pay very careful attention to these details. Wohler suggests you read this instruction set in its entirety before attempting to follow any single procedure. If there is something that you do not fully understand, please call Wohler Technical Support before performing a software update.

Make sure the unit is operating properly **before** updating the software. If the unit is not operating properly, please check the **Update Package Release Notes** document included with this package to see if the bug fixes cover the type of problem you're experiencing, or includes the new feature you need. If it does not, please contact Wohler Technical Support for advice.

Units with remote modules or special features (such as closed-caption display) that are described with a manual addendum may or may not be covered by this update procedure. Again, please check with Wohler Technical Support first if your unit has special features installed or enabled.

While the updates are in progress, error messages may appear in the LCD window of the unit, or it may go blank or display a row of black boxes. A "Mismatched Firmware" message may be transmitted over the RS-232A serial port. All of this is normal until all update procedures have been completed.

Please use the versions of Tera Term and ExtraPutty included with this update package. Other serial port terminal emulators will work for some procedures, but will cause others to fail, possibly placing the unit out of service.

There are several pieces of firmware to update in this unit. As a result, Wohler uses a letter to indicate the update package version. This letter does not correspond to any particular software version. In some cases, the package revision letter is incremented to include new documentation or procedures. Please consult the "Do I Need This Update" document to review the list of updates for each package version.

Versions contained in the update package will likely differ from the versions shown in the screen shots of this document.

Wohler S8 and E8 3G Series Update Procedure

Procedure 1 Computer Setup, Software, and Materials

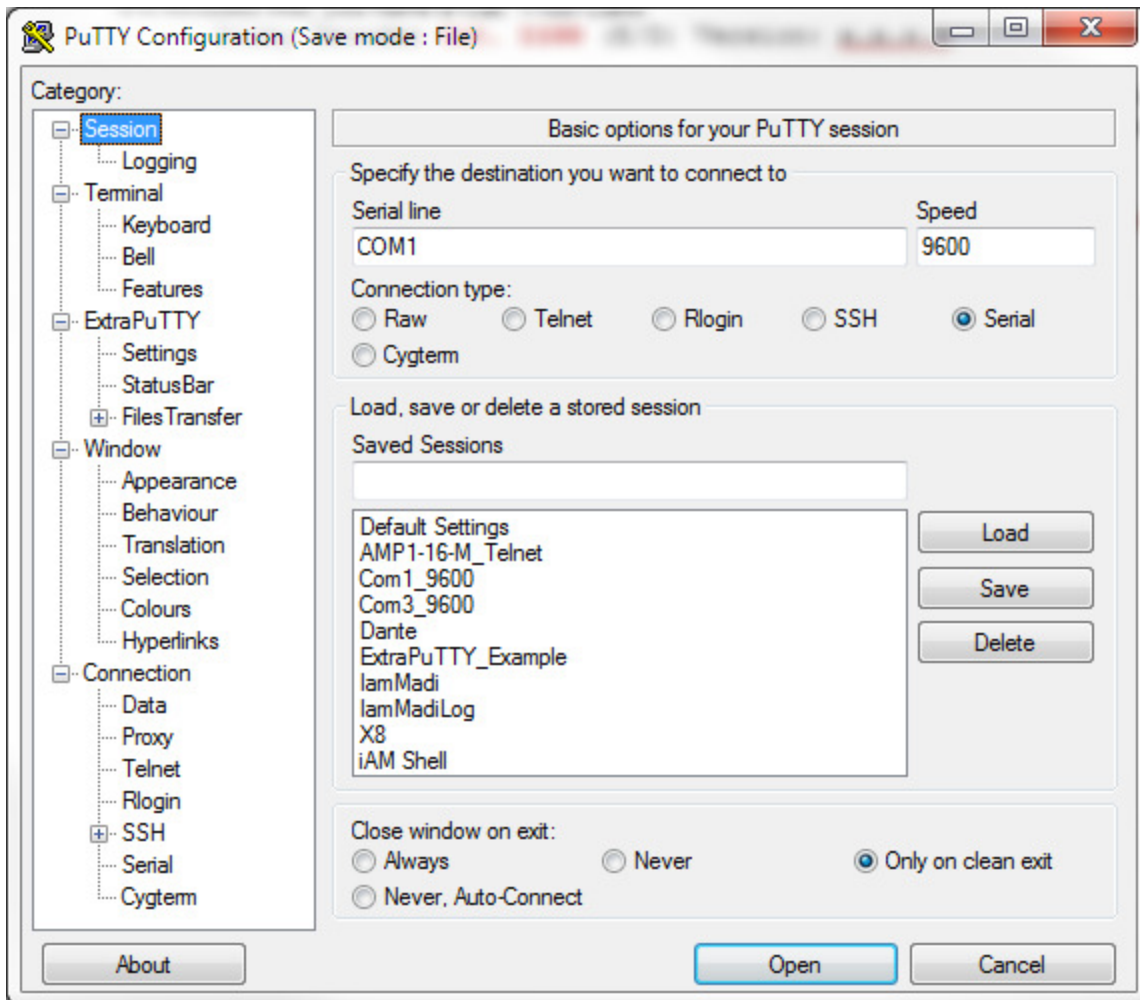
Overview: Select and prepare a computer to do the update procedure.

Pre-check: All updates require the instructions in this section to be performed.

Procedure:

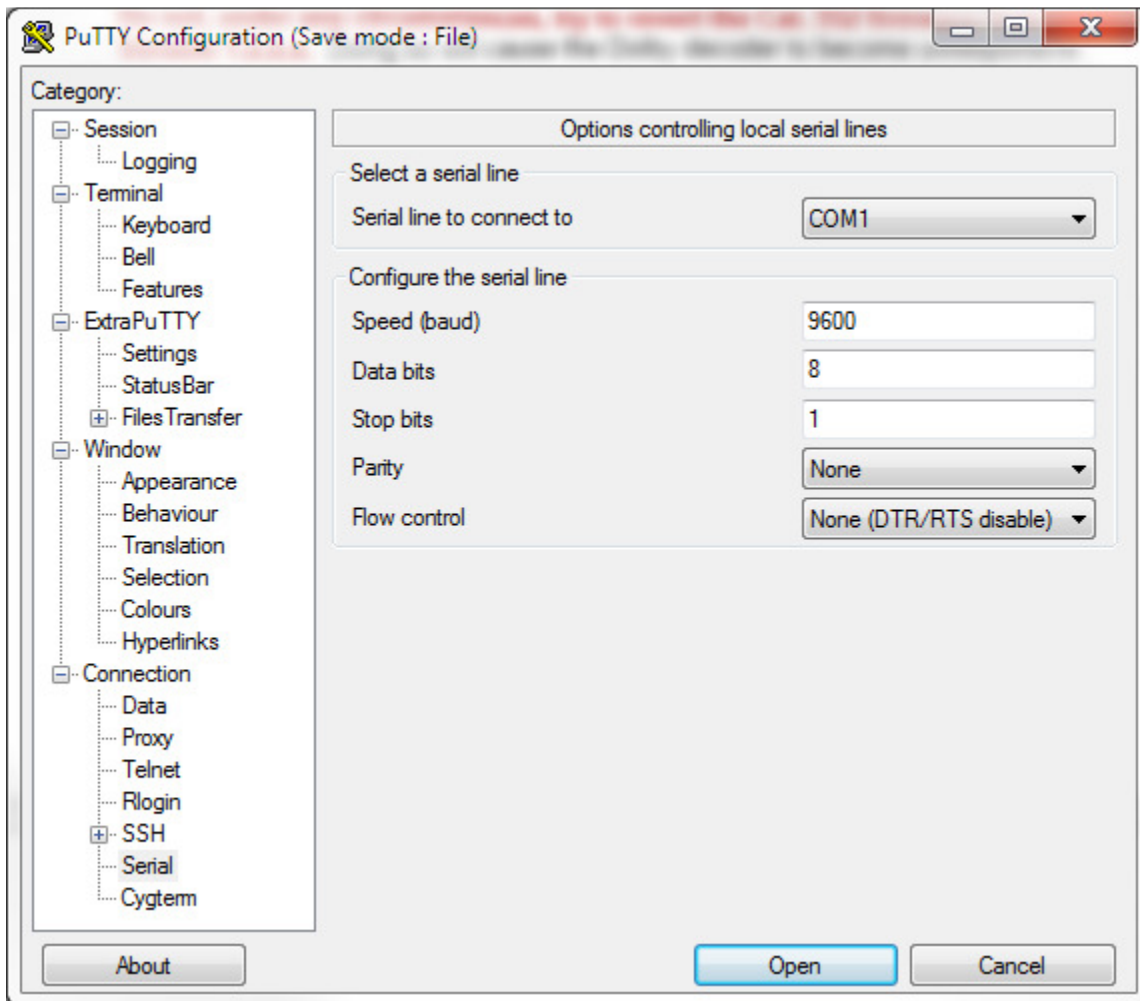
1. All the updates require a Wintel Desktop or Laptop PC. Speed and memory requirements are minimal.
2. A computer with a dedicated serial port is preferred.
3. If a computer with a dedicated serial port is not available, you may use a USB to Serial port adapter. Not all adapters are made equal, but Wohler has had good luck with the Aten brand.
4. The computer must have Windows 7 installed.
5. Ensure all applications are closed, except the terminal emulator used to perform the updates.
6. Ensure all software that might interrupt the update process is turned off. Consult your operating system help or the application help for instructions. Sources of interruption include, but not limited to:
 - 6.1. Automatic Sleep
 - 6.2. Automatic Hibernation
 - 6.3. Scheduled tasks such as backups and virus scans.
 - 6.4. A laptop with a weak battery (please ensure your computer is plugged in and not running on batteries).
7. Materials needed:
 - 7.1. A small flat-blade screwdriver that will fit into the OPTx and REF rotary switch slots.
 - 7.2. A serial cable, pinned one-to-one, female to male 9-pin d-sub terminations. Do NOT use a null-modem cable.
8. Please ensure you have the latest programming files from the Wohler website at www.wohler.com.
 - 8.1. You must sign into the Wohler website in order to access the downloads section under each product heading.
 - 8.2. Download the package appropriate for your unit.
 - 8.3. Unzip the package to a convenient place on your computer. The screen images in this instruction set assume you have unzipped it to the desktop.
9. If you have an E8, and need to update the Dolby Decoder, please install ExtraPutty. Otherwise, skip the remainder of this section.
10. To install ExtraPutty, click on the .exe installer, and follow the on-screen instructions.
11. Once installed, configure ExtraPutty.
 - 11.1. Open ExtraPutty and select the Serial Connection Type.

Wohler S8 and E8 3G Series Update Procedure



Wohler S8 and E8 3G Series Update Procedure

- 11.2. Click on Connection/Serial in the tree on the left side of the screen.



- 11.3. Select the appropriate COM port, 9600 baud, 8 data bits, 1 stop bit, no parity and no flow control.
- 11.4. If you wish, go back to the Session tree node, and save your settings.
- 11.4.1. Type in a name under "saved sessions."
- 11.4.2. Click the save button.
- 11.5. Then, to initiate the session, click Open.
- 11.6. You may now close the Extra Putty application, until it is needed for the Dolby Decoder update procedure.

End of Procedure 1

Wohler S8 and E8 3G Series Update Procedure

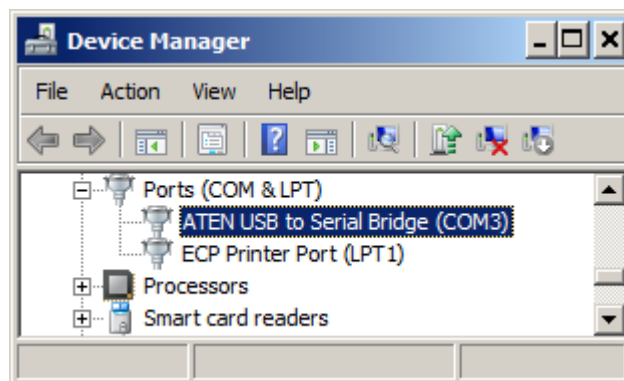
Procedure 2 Communications Setup and Software Version Verification

Overview: Connect the unit to the host computer, set up the serial port of the host computer, and verify the versions of the software in the unit.

Pre-check: All updates require the instructions in this section to be performed. Ensure the computer has been prepped as noted in the previous section, and that the update firmware has been downloaded from the Wohler website **and unzipped**.

Procedure:

1. If your computer has only one serial port, its COM designation is probably COM1. You may skip Steps 2 and 3.
2. If your computer is not equipped with an RS-232 serial port, and you are using a USB to serial converter, install it and set it up.
 - 2.1. Ensure you have the latest driver for your adapter.
 - 2.2. Follow the manufacturer's instructions to install the driver. Note that most manufacturers require you to insert a CD or install the driver **BEFORE** plugging the USB to Serial Adapter into the computer for the first time.
 - 2.3. Follow the manufacturer's instructions to enable and to set the FIFO levels to their maximum size.
 - 2.4. Connect the USB to Serial converter to your computer when instructed to do so by the driver installer.
3. If you have multiple serial ports on your computer, or if you are using a USB to serial adapter, please check the port's COM number.
 - 3.1. Open the Control Panel on the computer (usually Start/Control Panel).
 - 3.2. Open the Device Manager.
 - 3.3. Expand the list of devices (checkbox next to the computer name).
 - 3.4. Expand the Ports (COM & LPT) item.
 - 3.5. Expand the Ports (COM & LPT) item. Note the COM number of the port you will be using. In the example above, it is COM3. If you have multiple COM ports, note the com port you will connect to the unit to upgrade.

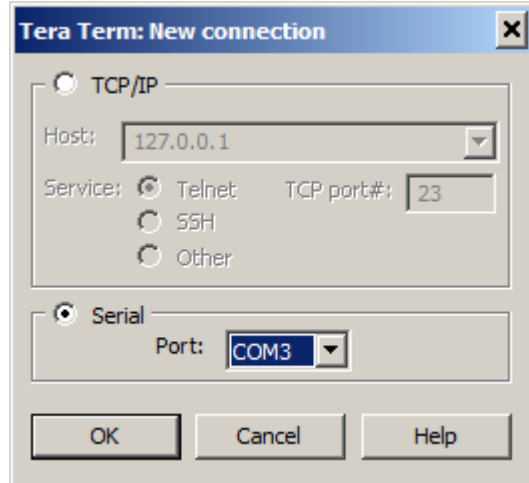


Control Panel / Devices / Ports Open

Note your COM port number here: _____

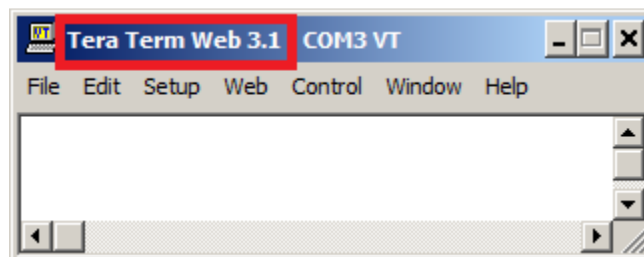
Wohler S8 and E8 3G Series Update Procedure

- 3.6. Close the Device Manager and Control Panel.
4. Start the Tera Term software and configure it:
 - 4.1. Look for the **ttermpro.exe** file in the **ttpro313** folder in the update package downloaded from Wohler.
 - 4.2. Double-click on the ttermpro.exe file.
 - 4.3. You may get virus warnings or “Allow Access” warnings. Please allow this program to run and to access the serial port.
 - 4.4. This program does not need to be installed. Simply executing the **ttermpro.exe** file is sufficient.
 - 4.5. Click the **Serial** checkbox and select the COM port noted in Step 3.5 above.



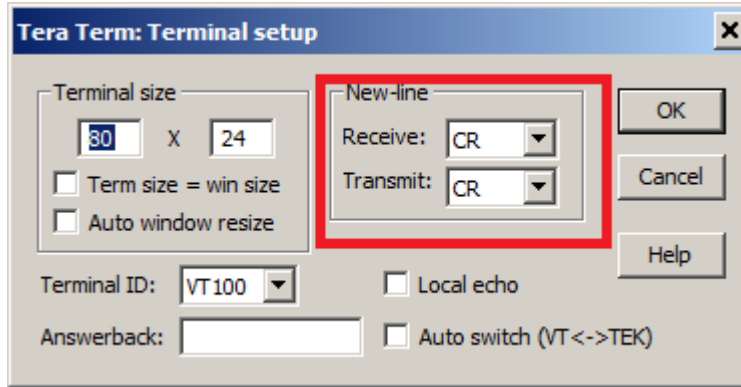
Tera Term New Connection Dialog

- 4.6. Press OK.
- 4.7. If you get an error message that says “Cannot open COMx,” click OK, close the Tera Term application, and go back to Step 3.
- 4.8. Ensure you are using the correct version of Tera Term. It should say **Tera Term Web 3.1** in the title bar.

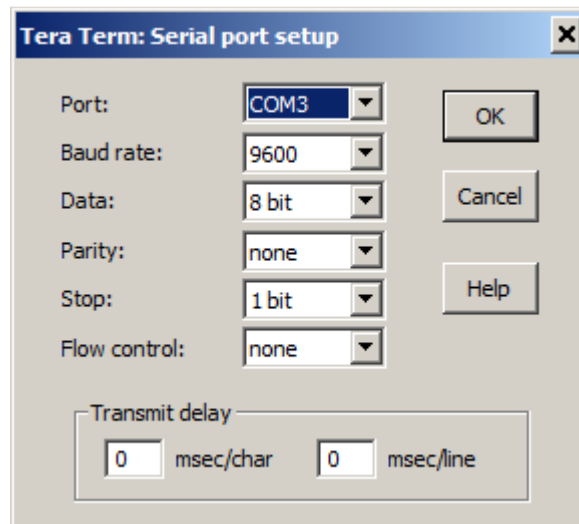


5. Select the Setup/Terminal menu item.
 - 5.1. You may choose whatever terminal size you desire.
 - 5.2. Ensure the New-Line Receive and Transmit pull-down boxes are set to **CR**.

Wohler S8 and E8 3G Series Update Procedure



- 5.3. Press OK
6. Select the Setup/Serial Port menu item
 - 6.1. The port should still be set to that noted in Step 3.5 and set in Step 4.5
 - 6.2. Baud rate is 9600
 - 6.3. Data is 8 bit
 - 6.4. Parity is none
 - 6.5. Flow control is none
 - 6.6. Delays are both zero.



Tera Term Serial Port Setup Dialog

- 6.7. Click OK.
7. Connect the computer to the **RS-232A** port of the unit.
 - 7.1. Unplug the unit.
 - 7.2. Using the straight-through RS-232 cable, connect the computer's COM port to the unit's **RS-232A** port.
 - 7.3. Do NOT change any rotary switches at this time.
8. Verify the unit's current firmware.
 - 8.1. Plug the unit in.
 - 8.2. Verify the Tera Term window shows information similar to that below. Depending upon options installed, some information may be different. Ensure the number in **blue** below appears. Record the software versions in red in the following section:

Wohler S8 and E8 3G Series Update Procedure

848132 Bootloader V5.00
Executing code.

RESET: Software

Wohler AMP1-E8, **848131** Rel. **6.02.00**, Apr 29 2014, 13:47:57
Main Hardware Revision: 1

Dolby Decoder Information:
Carrier Board Software Part Number: 848133
Carrier Board Software Version: **05.21**
Dolby Decoder (E/D) Version: **2.1.2.9**

Metering DSP Information:
DSP 0 has P/N 848014 V **3.2.0**
DSP 1 has P/N 848014 V **3.2.0**

SDI De-embedder: **919398**
PIC Software P/N: 848250
PIC Software Version: **06.01**
FPGA Software P/N : 848260
FPGA Software Version: **06.01**

Remote Control:
- Remote Hardware : Not present or communications error
- EEPROM Selection: Disabled
- EEPROM Additional Remote Options Selected: None.

<Enter> for Diagnostics

- 8.3. If your window does not show any information, double-check the serial port connections and settings.
- 8.4. If your window shows something different, ensure you are connected to RS-232 PORT A.
- 8.5. **If your unit shows either of the following software part numbers (in red), this procedure does not apply to your unit.** You have a non-3G unit. Stop this procedure, and contact technical support to get the correct firmware update package for your unit.

Wohler AMP2-E8, **848033** Rel. 3.06.00

<Enter> for Diagnostics

<OR>

RESET: normal-POR.

Wohler AMP-S8, **848005** Rel. 3.03.00, Mar 22 2009, 16:46:48
DSP 0x80 Has P/N 848015 V 3.1.0
DSP 0x88 Has P/N 848015 V 3.1.0
Assy. 919193
SDI board: 919181/919212
Remote H/W: ERR
Remote Mode: DISABLED

Wohler S8 and E8 3G Series Update Procedure

9. Enter your current version information in the space provided below, or simply take a picture of the terminal screen. Note that S8 units will not have a Dolby decoder or carrier installed. Some units will not have an SDI card installed. There are currently two hardware versions of SDI cards and three different Dolby decoders.

848131 (Main) Version: _____
848133 (Carrier) Version (E/D units only): _____
848329 (Carrier) Version (Cat. 1100 only): _____
Dolby Decoder Version (E/D units only): _____
DSP 0 Version: _____
DSP 1 Version: _____
SDI De-embedder Part Number: _____
SDI De-embedder PIC Version: _____
SDI De-embedder FPGA Version (919398 only): _____

End of Procedure 2

Wohler S8 and E8 3G Series Update Procedure

Procedure 3 Main Processor Update

Overview: Update the software for the main processor in the unit.

Pre-check: Compare the version of 848131 noted at the end of Procedure 2 against the **Main 848131 Vx.xx.hex** file in the **Firmware** folder of the unzipped update package. If the firmware in the unit is the same as or newer than the file's version, **you may skip this procedure.**

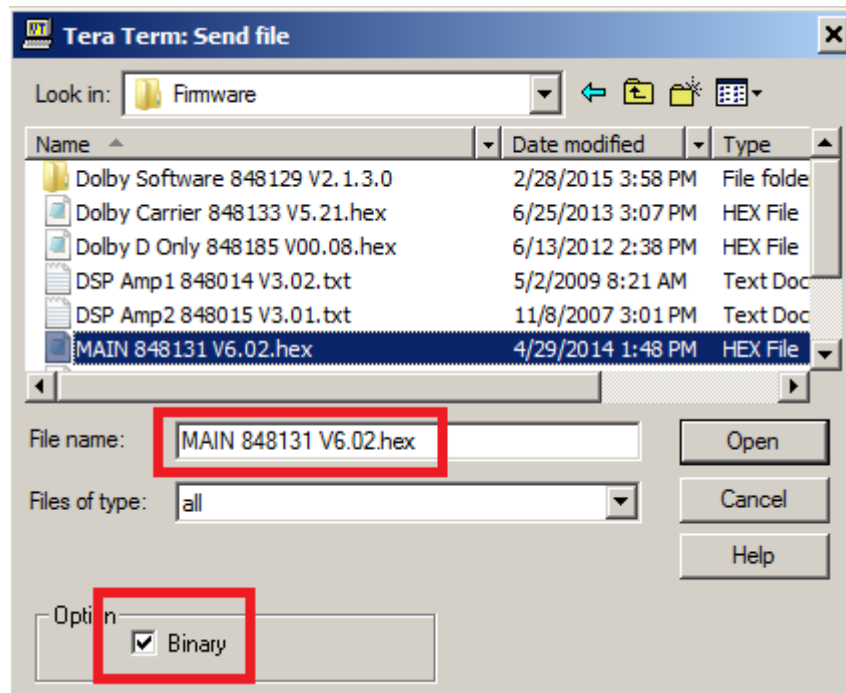
Procedure:

1. Ensure the computer is still connected to the unit's RS-232 A port.
2. Unplug the unit.
3. Note the REF rotary switch position here: _____
4. Turn the REF rotary switch to position 9.
5. Plug the unit in, and note the information in the Tera Term window.

```
848132 Bootloader V5.00
Bootload function selected.
You may now return the rotary switch to any operating position (0-7).
Erase current program <y/n>?
```

6. If the terminal window shows something different, check the rotary switch position, and ensure that the REF rotary switch was turned.
7. **Return the rotary switch to the position noted in Step 4.**
8. Press 'y'.
9. Open the file/**send file** menu item
10. Be sure the Option/Binary checkbox is **checked**.
11. Browse to the **MAIN 848131 Vx.xx.hex** file in the Firmware folder of the update package.

Wohler S8 and E8 3G Series Update Procedure



Main Update File Selected in Tera Term

12. Click **Open**. Tera term will open a dialog box to indicate file transfer progress. The main window will show a series of scrolling numbers. This update should take about two minutes.
13. When completed, the unit will restart, and should show the new main firmware version.
14. The unit may show a software mismatch error. **This is to be expected** until all update procedures are completed.

End of Procedure 3

Wohler S8 and E8 3G Series Update Procedure

RESET: normal-POR.

EEPROM UPDATED

Wohler AMP2-E8, 848131 Rel. 6.02.00, Apr 29 2014, 13:47:57
Main Hardware Revision: 1

Dolby Decoder Information:

Carrier Board Software Part Number: 848133

Carrier Board Software Version: 05.21

Dolby Decoder (E/D) Version: 2.1.2.9

Metering DSP Information:

DSP 0 has P/N 848014 V 3.2.0

SOFTWARE P/N MISMATCH: Expected: 848015

VERSION MISMATCH: Expected DSP Version: 3.1.0

DSP 1 has P/N 848014 V 3.2.0

SOFTWARE P/N MISMATCH: Expected: 848015

VERSION MISMATCH: Expected DSP Version: 3.1.0

SDI De-embedder: 919398

PIC Software P/N: 848250

PIC Software Version: 06.01

FPGA Software P/N : 848260

FPGA Software Version: 06.00

SDI FPGA VERSION MISMATCH: Expected: 06.01

NOTE SOFTWARE MISMATCHES ABOVE. Please use expected code versions.

Remote Control:

- Remote Hardware : Not present or communications error
- EEPROM Selection: Disabled
- EEPROM Additional Remote Options Selected: None.

<Enter> for Diagnostics

Wohler S8 and E8 3G Series Update Procedure

Procedure 4 DSP Update Procedure

Overview:

Update the software for the two DSP processors. These processors control the metering in the unit.

Pre-check:

Compare the versions of DSP 0 and DSP 1 noted at the end of Procedure 2 against the **DSP AMP1 848014 Vx.xx.hex** file or the **DSP AMP2 848015 Vx.xx.hex** file in the **Firmware** folder of the unzipped update package. 848014 is for the AMP1 product series. 848015 is for the AMP2 product series. If the firmware in the unit is the same as or newer than the file's version, **you may skip this procedure.**

Procedure:

1. Ensure the computer serial port is still connected to the RS-232A port of the unit.
2. Ensure the REF rotary switch is in the operating position noted in Procedure 3, Step 4 (**something other than Position 8 or Position 9**). Note: There should be no reason to change the REF rotary switch at this time if all instructions have been followed.
3. Plug the unit in (if it was unplugged).
4. Press <enter> and 'X' to enter the DSP loader menu.

```
Main -> X
```

```
DSP Diagnostic Menu
A Change DSP          L Load DSP
V Bootloader Versions Z Exit
```

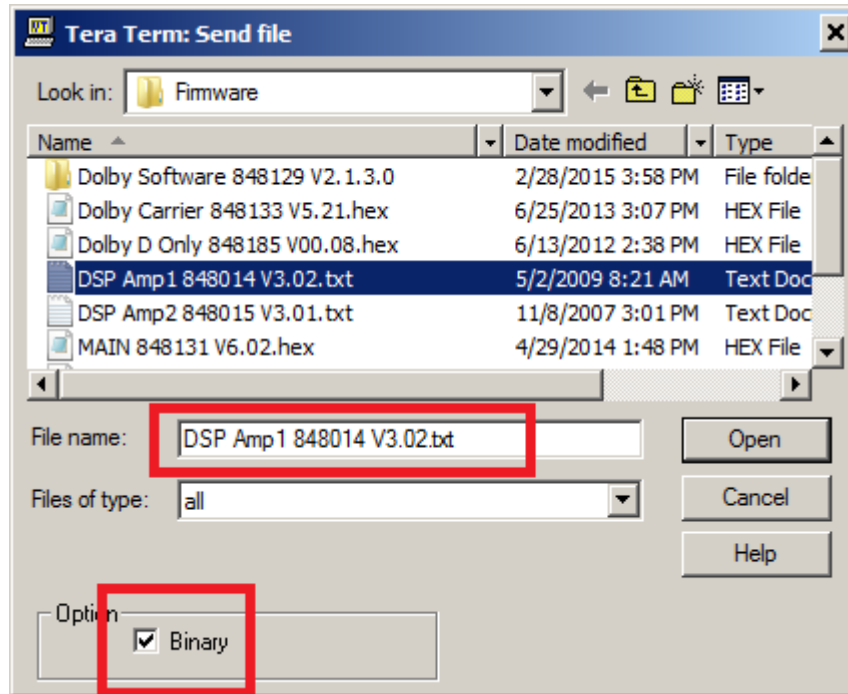
```
DSP 80:
- Bootloader Part Number: 847141
- Bootloader Version Number: 05.00
```

```
DSP 88:
- Bootloader Part Number: 847141
- Bootloader Version Number: 05.00
```

```
DSP [80] > ?
```

5. Press 'L' to load the first DSP.
6. Press 'Y'
7. Use the File/**Send File** menu item in Tera Term.
8. Be sure the Option/Binary checkbox is **checked**.
9. If you are updating an AMP2, browse to the **DSP Amp2 848015 Vx.xx.txt** file in the Firmware folder of the update package.
10. If you are updating an AMP1, browse to the **DSP Amp1 848014 Vx.xx.txt** file in the Firmware folder of the update package.

Wohler S8 and E8 3G Series Update Procedure



DSP File Selection in Tera Term

11. Click Open.
12. TeraTerm will open a dialog box to indicate progress.
13. The Tera Term window will show a series of periods until the update is complete.

Main -> X

```
DSP Diagnostic Menu
A Change DSP          L Load DSP
V Bootloader Versions Z Exit
```

```
DSP 80:
- Bootloader Part Number: 847141
- Bootloader Version Number: 05.00
```

```
DSP 88:
- Bootloader Part Number: 847141
- Bootloader Version Number: 05.00
```

DSP [80] > L

Load new software? <y/n>: y

```
DSP Loader
- Erasing DSP Flash.
-- Erase OK.
```

```
Send programming text file.
.....
```

Load Result: OK

14. Ensure **Load Result: OK** has appeared. If it has not, try the DSP update again, and ensure you have the **Options/Binary** checkbox checked in the Tera Term Send File dialog.
15. Type 'A' to change DSPs.

Wohler S8 and E8 3G Series Update Procedure

16. Type "88" followed by <Enter>.
17. Your command prompt should now change to DSP [88] >
18. Repeat Steps 5-14 to load the second DSP.

End of Procedure 4

Wohler S8 and E8 3G Series Update Procedure

Procedure 5 EEPROM Check Procedure

Overview:

When upgrading from any previous version of software to the latest version of software, the pre-existing presets and configuration cells in the EEPROM will be copied and reformatted as necessary. You should not need to follow this procedure unless you want to check that the EEPROM translation occurred correctly, or you need to enter some custom values to change the operation of the unit.

Pre-check:

If you do not need to enable or disable any custom features, **you may skip this procedure.**

Procedure:

1. Ensure the computer serial port is still connected to the RS-232A port of the unit.
2. Ensure the unit is running, and that the main menu is open by pressing <Enter>.
3. Please refer to AMP E8S8 EEPROM Version 2F ConfigTables.xls (or later) located in the documentation folder of the update package.
4. Press Q to read the current EEPROM settings.

```
Main -> q
      00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
00 : 2F 32 00 01 01 01 01 01 00 00 00 01 00 09 00 01
10 : 00 00 00 00 00 00 01 00 00 01 04 00 00 04 F0 00
20 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
30 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
40 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
50 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
60 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
70 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
80 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
90 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
A0 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
B0 : FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
C0 : 00 01 03 04 00 01 02 03 FF FF FF FF FF FF FF FF
D0 : 00 01 03 04 00 01 02 03 FF FF FF FF FF FF FF FF
E0 : 03 03 00 00 00 00 00 00 00 00 06 03 16 00 FF FF
F0 : 00 00 00 00 00 00 00 00 60 02 7F 7F FF
Main ->
```

5. Compare these values against the values in the Excel spreadsheet, taking into account any special features or options enabled or disabled on your unit.
6. To change a value, press 'w' for write.
7. Enter the address (in hexadecimal) of the EEPROM cell to be modified. In the example from the screen capture in Step 4 above, we're changing address 16 to 00 (hex). Currently the value is 01.
8. Enter the data value (in hexadecimal) to be written to that address, and press Enter.
9. Continue to modify other addresses as needed by repeating steps 6 through 8.
10. Confirm your settings by pressing 'Q'.
11. Press Z to exit the configuration menu.

End of Procedure 5

Wohler S8 and E8 3G Series Update Procedure

Procedure 6 Dolby Decoder Carrier Update Procedure

Overview:

The Dolby carrier card is updated to the latest software. This is the interface between the Wohler hardware and the Dolby decoder hardware.

Pre-check:

If you have an S8, you do not have a Dolby card or a carrier card, and you may skip this procedure.

Compare the version of 848133 (Dolby Carrier Software) noted at the end of Procedure 2 against ***Dolby Carrier 848133 Vx.xx All Others or Dolby Carrier 848329 Vx.xx Cat1100.hex*** file. If the firmware in the unit is the same as or newer than the file's version, **you may skip this procedure.**

848133 must be used in the carrier card if the Dolby Decoder is a Cat. 552 or 919345 module.
848329 must be used in the carrier card if the Dolby Decoder is a Cat. 1100.

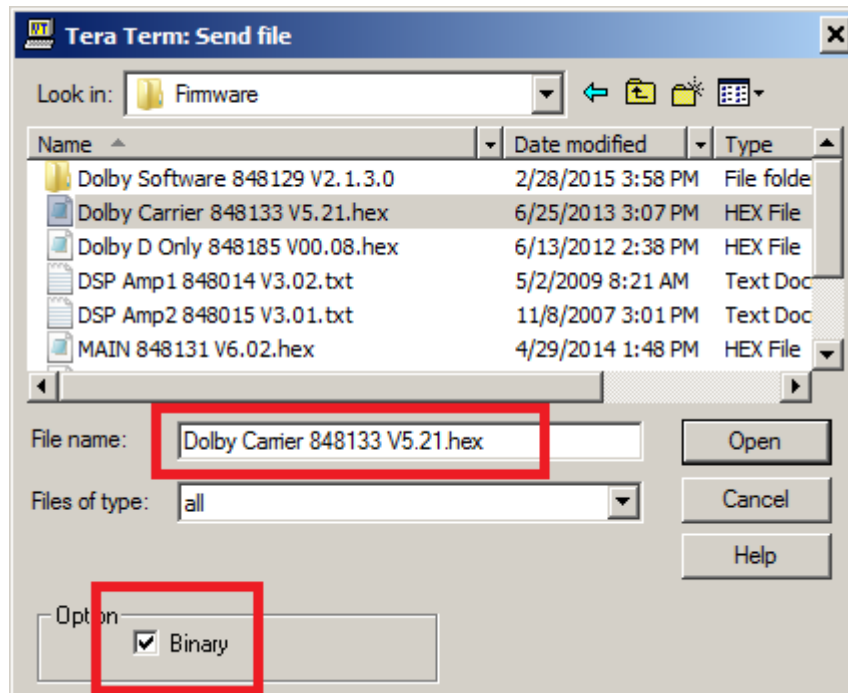
Procedure:

1. If the unit has power applied, remove it.
2. Connect the computer's serial port to the unit's **RS-232B** serial port.
3. Rotate the OPT1 rotary switch Position 9.
4. The terminal window should be displaying the following:

```
848134 Bootloader V5.00
Bootload function selected.
You may now return the rotary switch to any operating position (0-7).
Erase current program <y/n>?
```

5. If the terminal window is displaying something else, ensure you are connected to RS-232 Port B, and that the OPT1 rotary switch is in Position 9. Cycle power on the unit.
6. **Return the OPT1 rotary switch to Position 1.**
7. Press 'Y' to erase the program.
8. When the terminal window asks for the programming hex file, go to the File / **Send File...** menu item.
9. Be sure the Option/Binary checkbox is **checked**.
10. Browse to the ***Dolby Carrier 848133 Vx.xx.hex or Dolby Carrier 848329 Vx.xx*** file in the Firmware folder of the update package.

Wohler S8 and E8 3G Series Update Procedure



Tera Term File Selection

11. Click Open.
12. Tera Term will open a progress dialog box. The main window will show a sequence of rotating numbers.
13. When the update is finished, the board will restart.
14. Ensure the restart is successful. It will look something like this:

```
Erasing ...
Erase complete. Send programming hex file.
00000001FF0ED96401D0D99AD9501200F06004D09C
Programming finished.
Executing code.

Dolby Decoder Carrier Board Part Number: 919304
Software Part Number: 848133
Version: 05.21
Dolby Cat. 552 Software Version: 2.1.2.9

Unlock signal is connected.

Press Enter for diagnostic menu.
```

End of Procedure 6

Wohler S8 and E8 3G Series Update Procedure

Procedure 7 Dolby Cat. 552 Decoder Update Procedure

Overview:

The **Dolby Cat. 552 Decoder** is updated with the latest firmware available from Dolby Laboratories. During this update, the LCD on the front panel may display "I2C Error." This is to be expected until the update is complete.

Pre-check:

If you have an AMPx-S8-xDA, you do not have a Dolby card or a carrier card, and you may skip this procedure.

If you have an AMPx8-D8-xDA, you have a Dolby D only decoder card. To update it, you must follow **Procedure 9**.

If you have a Cat. 1100 decoder card, you must follow **Procedure 8**.

If you are unsure what you have, perform steps 1-5 below. For this procedure, the carrier card should report:

Dolby Cat. 552 Software Version: x.x.x.x

Compare the Dolby Decoder Version above against the **Dolby Cat. 552 Software Vx.x.x.x** folder name. If the firmware in the unit is the same as or newer than the folder's version, **you should skip this procedure**.

Do not, under any circumstances, try to revert the Cat. 552 firmware from version 2.x.x.x to Version 1.x.x.x. Doing so will cause the Dolby decoder to become unresponsive.

Procedure:

1. Ensure the computer's serial port is connected to RS-232B
2. **ExtraPutty is used for this procedure instead of Tera Term. Please be sure to close Tera Term, and open ExtraPutty.** Instructions for this are in Procedure 1.
3. Ensure the OPT1 rotary switch is set to Position 1.
4. Cycle power on the unit.
5. The terminal window should show something similar to the following:

```
Dolby Decoder Carrier Board Part Number: 919304
Revision:                               E2 or earlier.
Software Part Number:                   848133
Version:                               05.22
Dolby Cat. 552 Software Version:        2.1.3.0
```

Unlock signal is connected.

Press Enter for diagnostic menu.

Wohler S8 and E8 3G Series Update Procedure

6. If you see something else, repeat steps 1-5.
7. Press Enter to go into the diagnostic menu.
8. Press U to update the Dolby firmware.
9. **In the steps that follow be sure to use the XMODEM protocol and load the files requested in the order requested.** Failure to do so will render the Dolby decoder inoperable. Note that the first file (*cat552boot.bin*) is requested **twice**.
10. Your terminal should now be displaying:

```
Attempting to reboot decoder and get current operating version.  
Dolby Cat. 552 Software Version: 2.1.2.8
```

```
CAT552 Software Update Module  
NOTE: Set binary file transfer protocol to XModem.  
Ready to receive cat552boot.bin...
```

11. In ExtraPutty, choose **File/Transfer/XMODEM/Send...**
12. The file browser will open. Open the **Dolby Software 848129 Vx.x.x.x** folder.
13. Select **1boot.bin**.
14. Press Open.
15. ExtraPutty will open a progress dialog. During this update, no additional information will appear in the terminal window itself.
16. Once the update completes, the terminal window should display "Verified."
17. **Repeat steps 10-14, using 1boot.bin again.**
18. Repeat steps 10-14 four more times, **opening the files requested** in the terminal window. After each step, the **"Verified"** text should appear in the terminal window. If it does not, or if the ExtraPutty progress dialog stalls, power cycle the unit, and restart this procedure from the beginning.
19. Once all the files have been loaded, the terminal window will show the new Dolby Decoder firmware version. It will look something like this:

```
CAT552 Software Update Module  
NOTE: Set binary file transfer protocol to XModem.  
Ready to receive cat552boot.bin... Verified.
```

```
The Cat. 552 now needs to use the new bootloader.  
Please resend cat552boot.bin... Verified.  
Ready to receive cat552dsp1.bin... Verified.  
Ready to receive cat552dsp11.bin... Verified.  
Ready to receive cat552dsp2.bin... Verified.  
Ready to receive cat552dsp21.bin... Verified.
```

```
Rebooting decoder card and looking for version information...
```

```
Decoder Version: 2.1.2.9
```

```
Dolby ->
```

20. Close ExtraPutty, and use Tera Term for any remaining procedures.
21. Cycle power on the unit.

End of Procedure 7

Wohler S8 and E8 3G Series Update Procedure

Procedure 8 Dolby Cat. 1100 Decoder Update Procedure

Overview:

The **Dolby Cat. 1100 Decoder** is updated with the latest firmware available from Dolby Laboratories. During this update, the LCD on the front panel may display "I2C Error." This is to be expected until the update is complete.

Pre-check:

If you have an AMPx-S8-xDA, you do not have a Dolby card or a carrier card, and you may skip this procedure.

If you have an AMPx8-D8-xDA, you have a Dolby D only decoder card. To update it, you must follow **Procedure 9**.

If you have a Cat. 552 decoder card, you must follow **Procedure 7**.

If you are unsure what you have, perform steps 1-4 below, or check the report from RS-232A. If it includes **the following**, you are using the correct procedure.

```
Dolby Decoder Cat. 1100 (E/D) Version: x.x.x.x
```

Otherwise, compare the Dolby Decoder Version noted at the end of Procedure 2 against the **Dolby CAT1100_Vx.x.x.x.mod** file name. If the firmware in the unit is the same as or newer than the file's version, **you should skip this procedure**.

Procedure:

1. Ensure the computer's serial port is connected to RS-232B
2. **ExtraPutty is used for this procedure instead of Tera Term. Please be sure to close Tera Term, and open ExtraPutty.** Instructions for this are in Procedure 1.
3. Ensure the OPT1 rotary switch is set to Position 1.
4. Cycle power on the unit.
5. The terminal window should show something similar to the following:

```
Dolby Decoder Carrier Board Part Number: 919304  
Software Part Number: 848329 version 06.00  
Dolby Cat. 1100 Software Version: 3.0.0.0  
Press Enter for diagnostic menu..
```

6. If you see something else, repeat steps 1-4.
7. Press Enter to go into the diagnostic menu.
8. Press U to update the Dolby firmware.
9. Type Yes to confirm your desire.

Wohler S8 and E8 3G Series Update Procedure

10. Your terminal should now be displaying:

```
Booting decoder, Update Mode.
```

```
Decoder in update mode.
```

```
Once the transfer has started, no further updates will be printed here  
until the transfer is complete.
```

```
Start the XMODEM file transfer from the terminal program now.
```

11. In ExtraPutty, choose **FilesTransfer/XMODEM/Send...**
12. The file browser will open. Open the ***Dolby CAT1100_V3.0.0.0.mod*** file.
13. ExtraPutty will open a progress dialog. During this update, no additional information will appear in the terminal window itself.
14. Once the update completes, the terminal window should display "Verified," and the processor will restart.
15. Cycle power on the unit.
16. Please close ExtraPutty, and use Tera Term for any remaining procedures.

End of Procedure 8

Wohler S8 and E8 3G Series Update Procedure

Procedure 9 Dolby D Only (919345) Decoder Update Procedure

Overview:

During this update, the LCD on the front panel may display "I2C Error." This is to be expected until the update is complete.

Pre-check:

If you have an AMPx-S8-xDA, you do not have a Dolby card or a carrier card, and you may skip this procedure.

If you have an AMPx8-E8-xDA, you have a Dolby D/D+/E (Cat. 552) decoder card or a Cat. 1100 card. To update it, you must follow Procedure 7 or Procedure 8.

If you are unsure, perform steps 1-5 below. You should see something similar to this if you have a D-only card:

D-Only Decoder (919345) Version: 0.0.0.x

Compare the Decoder Version noted above against the ***Dolby D Only 848185 Vxx.xx.hex*** file name in the firmware folder of the update package. If the firmware in the unit is the same as or newer than the folder's version, you should skip this procedure.

Procedure:

1. Ensure the computer's serial port is connected to RS-232B.
2. Ensure the OPT1 rotary switch is in Position 1.
3. Be sure to use Tera Term for this procedure and NOT ExtraPutty.
4. Apply power to the unit.

Dolby Decoder Carrier Board Part Number: 919304
Revision: E2 or earlier.
Software Part Number: 848133
Version: 05.22

D-Only Decoder (919345) Version: 0.0.0.8

Unlock signal is connected.

Diagnostic Menu:

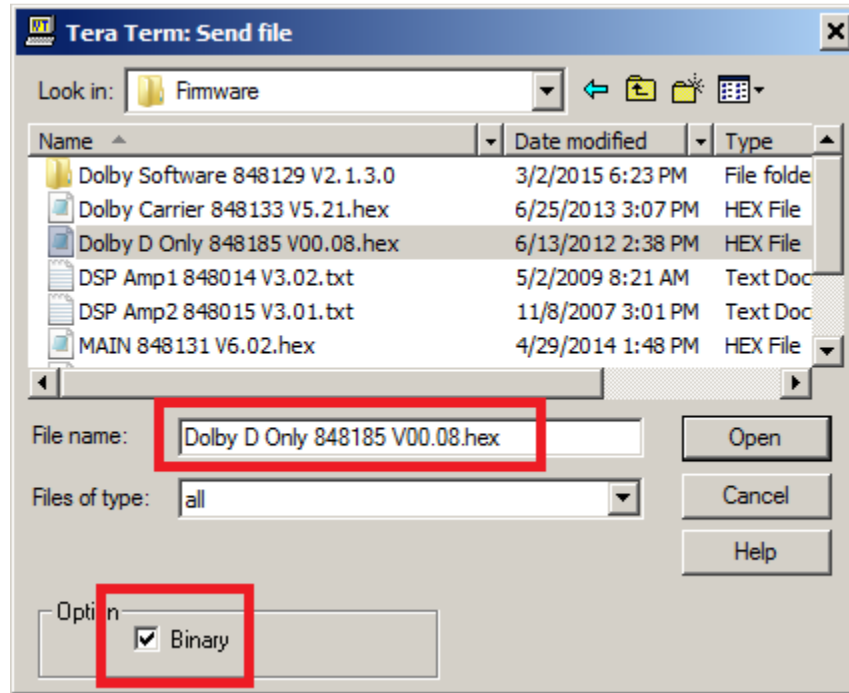
U Update Dolby Firmware
Z Exit

NOTE: Commands from the front panel are ignored while this menu is open.

Dolby ->

Wohler S8 and E8 3G Series Update Procedure

5. Press 'U' to update the Dolby Decoder's firmware.
6. Press 'Y' to erase the card. Wait for the **Erase complete** message to appear..
7. Open the File/Send File... menu item in Tera Term.
8. Navigate to the **Dolby D Only 848185 V0x.xx.hex** file.



9. Press Open
10. A Tera Term progress dialog will open. The TeraTerm window will show a series of periods as the file is uploading.
11. When the upload is complete, your window should show:

```
Dolby D Only Decoder Detected.  Bootloader version: 01.04

Press Y to erase and update the
decoder card.  Press any other key to abort:  y
- Erasing ...
- Waiting up to 25 seconds for erase...
- Erase complete.

Send the programming file for the 919345 card.
.....
- Dolby decoder card Update complete..

Rebooting decoder card and looking for version information...
Decoder Version: 0.0.0.8

Dolby ->
```

12. Cycle power on the unit.

End of Procedure 9

Wohler S8 and E8 3G Series Update Procedure

Procedure 10 919300 SDI De-Embedder Update Procedure

Overview:

The 919300 SDI de-embedder is updated.

Pre-check:

If you have an AMPx-x8-**DA** unit, there is no SDI option card fitted. **You may skip this procedure.**

Look at the SDI de-embedder part number recorded at the end of Procedure 2. If the part number is 919300, continue with this procedure. **If the part number is 919398, please skip this procedure and use Procedure 11 instead.**

Compare the SDI software Version noted at the end of Procedure 2 against the **SDI Processor 919300 848135 Vxx.xx.hex** file name in the firmware folder of the update package. If the firmware in the unit is the same as or newer than the file's version, you may skip this procedure.

Procedure:

1. Plug the computer's RS-232 port into the units RS-232**C** port.
2. Ensure the OPT 2 rotary switch is in Position 1.
3. Cycle power on the unit.
4. The unit should display something similar to the following:

```
Reason(s) for reset:  normal power-up
```

```
919300 SDI De-embedder
Software Part Number: 848135
Software Version:      05.29
```

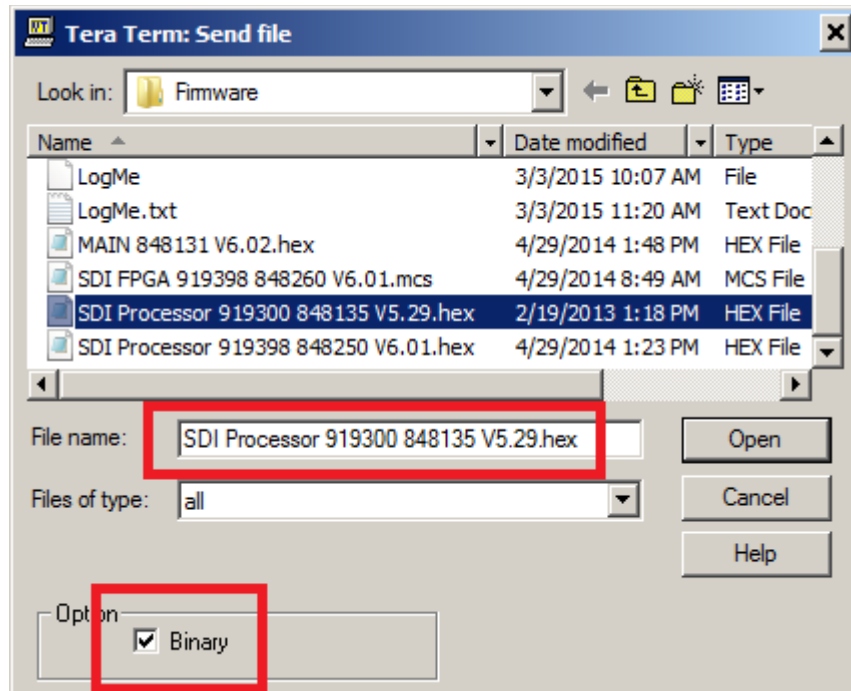
```
Press ENTER to display diagnostic menu.
```

5. If the above items in red are not displayed or are different, please repeat Steps 1-4.
6. Rotate the rotary encoder to Position 9.
7. Power cycle the unit.
8. The terminal window should now display:

```
848136 Bootloader V5.00
Bootload function selected.
You may now return the rotary switch to any operating position (0-7).
Erase current program <y/n>?
```

9. Return the rotary switch to Position 1.
10. In Tera Term, open the **File/Send File ...** menu.
11. Browse to **SDI Processor 919300 848135 Vx.xx.hex**.
12. Check the **Option/Binary** check box.

Wohler S8 and E8 3G Series Update Procedure



13. Press **Open**.
14. Tera Term will open a dialog box to indicate the file transfer progress.
15. The main terminal window will display a series of periods as the firmware loads.
16. Once the update is complete, the terminal window will display the following.

```
Programming finished.  
Executing code.
```

```
Reason(s) for reset:  normal power-up
```

```
919300 SDI De-embedder  
Software Part Number: 848135  
Software Version:      05.29
```

```
Press ENTER to display diagnostic menu.
```

End of Procedure 10

Procedure 11

919398 SDI De-Embedder Processor Update Procedure

Overview:

The 919398 SDI de-embedder processor is updated. The 919398 also contains an FPGA that may or may not need to be updated. Once this procedure is completed, proceed to Procedure 10.

Pre-check:

If you have an AMPx-x8-**DA** unit, there is no SDI option card fitted. **Your unit update is complete.**

Look at the SDI de-embedder part number recorded at the end of Procedure 2. If the part number is 919398, continue with this procedure. **If the part number is 919300, please skip this procedure and use Procedure 10 instead.**

Compare the version of the 848250 SDI Software against the ***SDI Processor 919398 848250 Vx.xx.hex*** file version in the update package firmware folder. If the 848250 version is the same as or newer than the file's version, you may skip this procedure.

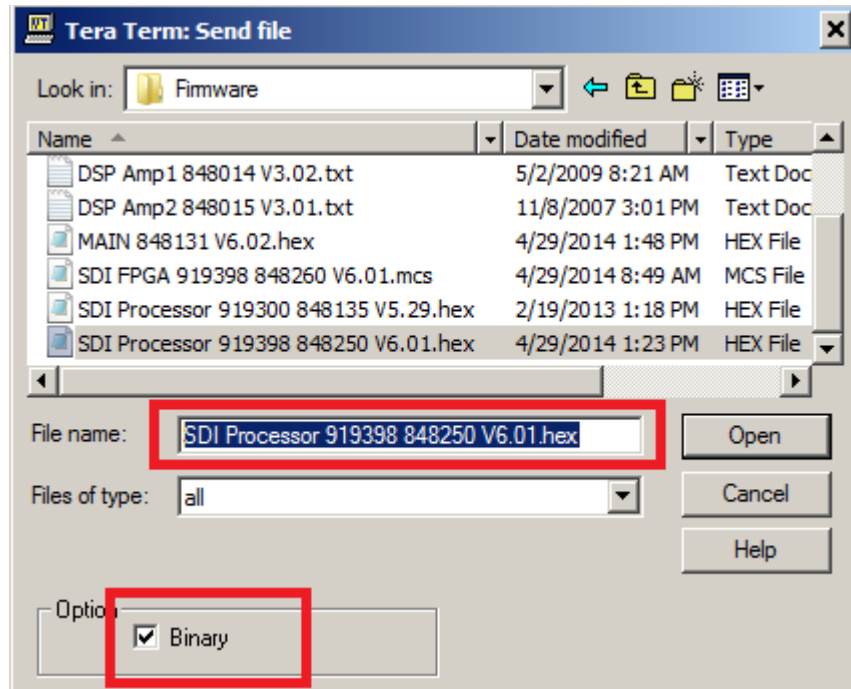
Procedure:

1. Remove power from the unit.
2. Connect the RS-232 cable to the unit's **RS-232C** port.
3. Rotate the OPT2 rotary switch to position 9.
4. Apply power to the unit.
5. The terminal should display something similar to the following:

```
848136 Bootloader V5.00
Bootload function selected.
You may now return the rotary switch to any operating position (0-7) .
Erase current program <y/n>?
```

6. If something else is displayed, double check Steps 1-5.
7. Return the rotary switch to Position 1.
8. Press Y to erase the current program.
9. Select File / Send File ... in Tera Term.
10. A file dialog will open. Navigate to the ***SDI Processor 919398 848250 V6.01.hex*** file.
11. Ensure the Option/Binary checkbox is **checked**.

Wohler S8 and E8 3G Series Update Procedure



Open File Dialog for SDI Update in Tera Term

12. Press **Open**.
13. Tera Term will open a progress dialog box, and print periods in the terminal window.
14. Once the update is complete, the terminal window will display "Programming finished" and will contain the information below. Please continue on to the FPGA update procedure.

```
Programming finished.  
Executing code.
```

```
Reason(s) for reset:
```

```
919398 SDI De-embedder  
PIC Software P/N:      848250  
PIC Software Version:  06.01  
FPGA Software P/N:     848260  
FPGA Version:         06.00
```

```
Press ENTER to display diagnostic menu.
```

End of Procedure 11

Wohler S8 and E8 3G Series Update Procedure

Procedure 12 919398 SDI De-Embedder FPGA Update Procedure

Overview:

The 919398 SDI de-embedder FPGA is updated.

Pre-check:

If you have an AMPx-x8-**DA** unit, there is no SDI option card fitted. **Please skip this procedure.**

Look at the SDI de-embedder part number recorded at the end of Procedure 2. If the part number is 919398, continue with this procedure. **If the part number is 919300, please skip this procedure and use Procedure 10 instead.**

If you have not yet done Procedure 11, **please complete that procedure before starting this one.**

Procedure:

1. Ensure the computer is still connected to the **RS-232C** port.
2. Ensure the rotary switch is in Position 1.
3. Power cycle the unit.
4. The terminal window should show the information below:

```
848136 Bootloader V5.00
Executing code.
```

```
Reason(s) for reset:  normal power-up
```

```
919398 SDI De-embedder
PIC Software P/N:      848250
PIC Software Version:  06.01
FPGA Software P/N:     848260
FPGA Version:          06.00
```

```
Press ENTER to display diagnostic menu.
```

5. If the unit does not show the information above, repeat steps 1-4.
6. Note the **FPGA version** in the information above. Compare it against the **SDI FPGA 919398 848260 Vx.xx.mcs** file in the Firmware folder of the update package. If the FPGA version in the unit is the same as or newer than the file's version, **you may skip this procedure.**
7. Press Enter to open the diagnostic menu.
8. Press 'F' to enter the flash menu.
9. Press 'P' to program the FPGA flash.
10. Heed the warning displayed on the screen. **Be sure the host computer will not sleep, hibernate, or shut down during the update.**
11. The terminal window should be displaying something similar to that below:

Wohler S8 and E8 3G Series Update Procedure

```
919398 SDI De-embedder
PIC Software P/N:      848250
PIC Software Version:  06.01
FPGA Software P/N:     848260
FPGA Version:         06.00
```

Press ENTER to display diagnostic menu.

Diagnostic Menu:

NOTE: The front panel controls will not respond while in this menu.

```
R Read Rotary Switch      V Print Software Version Info
L LED Test                H Display Status of Hardware Input Pins
S SDI Tests               F Flash Menu
X Exit                    ? This Menu
```

Main ->

Flash test menu.

- P Program the flash from a .mcs file.
- W Do a write/read test on the FPGA flash.
- L Read and log a flash.
- X Exit

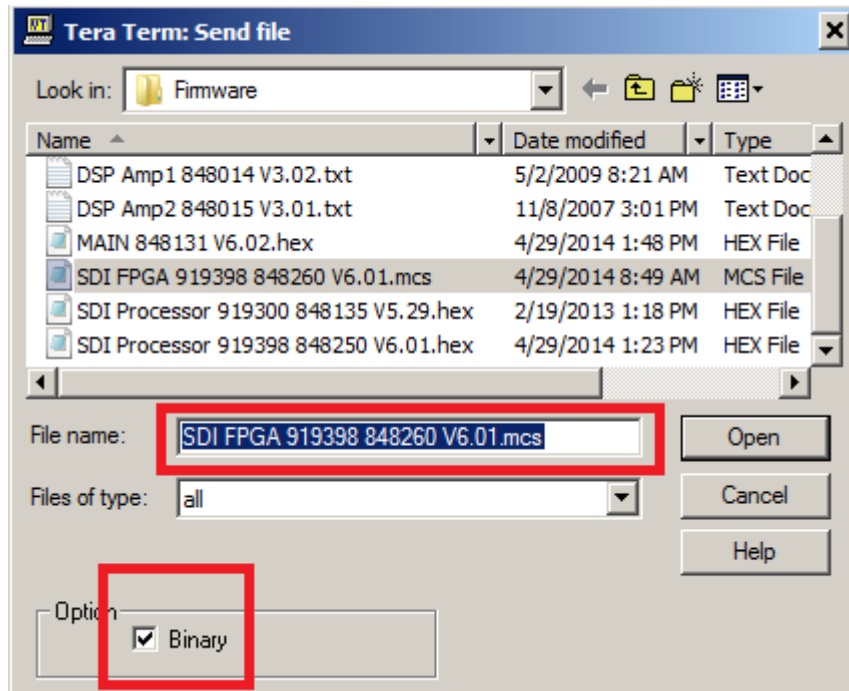
Flash -> P

WARNING: The flash for the FPGA will be erased and re-written.
You need to have the 260Vxxx.mcs file ready to send.
This process may take up to **50 MINUTES**.
The unit will then be restarted.
Please ensure the host computer is plugged in, and all the power saving
features in the control panel are disabled and set to 'always on'.

DO YOU WANT TO PROCEED? (Y/N)?

12. Press 'Y' to begin the update.
13. Use the **File/Send File ...** menu item in Tera Term.
14. Navigate to the ***SDI FPGA 919398 848260 Vx.xx.mcs*** file in the Firmware folder of the update package.
15. Ensure the **Option/Binary** checkbox is checked.

Wohler S8 and E8 3G Series Update Procedure



Tera Term Send File Dialog

16. Press Open
17. Tera Term will open a progress dialog. The unit will report the page of the flash being written.
18. When the update is complete, the terminal window will show something similar to the following:

```
Writing Page: 3133 / 4096 v
Writing Page: 3134 / 4096 v
Writing Page: 3135 / 4096 v
Writing Page: 3136 / 4096 v
Writing Page: 3137 / 4096 v

Time Elapsed: 0 days 00:38:59

Flash program successful. You must now restart the unit.
```

19. Unplug the RS-232 cable from the unit and restart it.

End of Procedure 12

Wohler S8 and E8 3G Series Update Procedure