Broadcast Electronics Inc.
4100 North 24th Street, Quincy, Illinois 62305 USA • Phone (217) 224-9600 • Fax (217) 224-9607 • www.bdcast.com • bdcast@bdcast.com

STX Software Update
Application Guide

597-4101-002
10/20/09
Rev.B

STX Software Update
Application Guide

©2009 Broadcast Electronics Inc. All rights reserved.

The information in this publication is subject to improvement and change without notice. Although every effort is made to ensure the accuracy of the information in this manual, Broadcast Electronics Inc. accepts no responsibility for any errors or omissions. Broadcast Electronics Inc. reserves the right to modify and improve the design and specifications of the equipment in this manual without notice. Any modifications shall not adversely affect performance of the equipment so modified.

Proprietary Notice
This document contains proprietary data of Broadcast Electronics Inc. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, translated into any other language in any form or by any means, electronic or mechanical, including photocopying or recording, for any purpose, without the express written permission of Broadcast Electronics Inc.

Trademarks
Broadcast Electronics and the BE logo are registered trademarks of Broadcast Electronics Inc.

All other trademarks are property of their respective owners.

Table of Contents

1 Purpose of this Document 1

2 Tools / Items Needed 1

3 Estimated Setup Time 1

4 Software Update – Controller/Exciter 1

5 Troubleshooting 3

6 RF Technical Services Contact Information 6

©2009 Broadcast Electronics Inc.

1 Purpose of this Document

The purpose of this document is to describe the necessary steps required to update the STX Software in the field.

2 Tools / Items Needed

- ☐ STX Instruction Manual (597-4102) or STX Quick Installation Guide (597-4101)
- ☐ Latest version of software
- ☐ Computer
- ☐ Ethernet crossover cable

3 Estimated Setup Time

Providing that you have the items listed above, it will take approximately 10 minutes to update software.

4 Software Update – Controller/Exciter

Step 1 – To upgrade the Controller/Exciter software use the following procedure, or the one in the STX Instruction manual, section 8 entitled; "Software Update – Controller/Exciter." Updated code is available on the Broadcast Electronics website at www.bdcast.com/service.

The software update is performed locally at the transmitter with a direct connection between a PC and the transmitter.

The software update program requires a Windows computer with the following requirements -

- Windows XP – 500 MHz or greater.
- Windows Internet Explorer 6 or 7.
- High speed wired I.P. connection.

Terminate all other running programs during the download. It is recommended the computer be on the same local network as the transmitter. Once the software is downloaded to the transmitter, the controller must be reset or the AC power cycled (off then on) to load the new version. To update the controller/exciter software, proceed as follows:

⚠ **NOTE: IT IS RECOMMENDED THE COMPUTER BE ON THE SAME LOCAL NETWORK AS THE TRANSMITTER.**

⚠ **NOTE: DO NOT CYCLE THE AC POWER DURING THE UPDATE PROCESS. ENSURE THE CODE HAS BEEN INSTALLED BEFORE AC POWER IS CYCLED.**

©2009 Broadcast Electronics Inc.

1. Connect the transmitter to the PC. If a PC is to be directly connected to the transmitter, connect an Ethernet crossover cable between the PC Ethernet port and the transmitter ETHERNET connector. For direct PC connections, the PC must be configured for the I.P. family of the transmitter. Ensure the PC is configured for the transmitter I.P. family.
2. Using Windows Explorer, copy all of the software files to a folder on the hard drive "C:\" of the PC. Unzip the files (if they have been zipped) ensuring that all of the files remain in the "STXLP Upgrade" directory.
3. On the PC, terminate all running programs.
4. Terminate all transmitter I.P. users.
5. On the PC, using Windows Explorer, navigate to the directory on the hard drive of the PC where you copied the upgrade files to and double click on the **AutoUpdate.exe** application icon.
   The AutoUpdate program will appear.

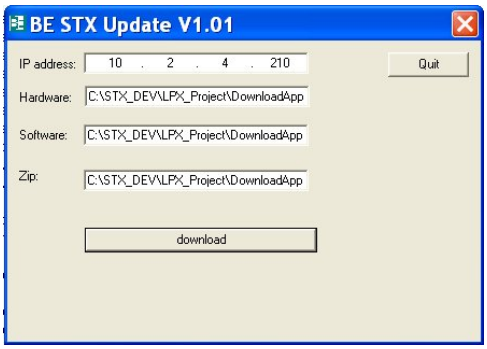


Figure 3. STXLP AutoUpdate Program

6. Once the **AutoUpdate** application has launched, enter the STXLP Transmitter I.P. Address.

NOTE: DO NOT CYCLE THE AC POWER DURING THE FLASH WRITE PROCESS.

NOTE: IF A PROBLEM OCCURS, SELECT CANCEL TO STOP THE DOWNLOAD.

7. Select DOWNLOAD.
   The status bar presents the progress of the download and flash writing process. When finished, the new code will automatically start.
8. When finished, select QUIT.
9. Cycle the AC power (operate to off then on) to activate the code.
10. Check the software version using the DIAGNOSTICS TRANSMITTER menu to ensure it updated.
11. If the download fails such as from a lost I.P. connection, repeat the procedure.

©2009 Broadcast Electronics Inc.

5 Troubleshooting

5.1 Emergency Control – Backup Controller

If a controller fault occurs, the transmitter will be operating from the backup controller. When this occurs:

- The front panel CNTL LED will flash red.
- Depending on the failure, the LCD display will be blank or frozen.
- The transmitter will operate at the power level entered in the SETUP EMERGENCY PWR menu.
- Ignore all other front panel indicators. The indicators may not provide accurate information.
- The following remote functions will be functional: 1) mute, 2) failsafe, 3) transmitter on, 4) transmitter off, 5) AFC lock status, and 6) fault status.

  The transmitter can be operated in this condition for an extended period of time. However, the unit will be operating with no automatic power control.

  Typical causes of a controller failure are: 1) an improper download or 2) problems with the power supplies on the controller pcb assembly. To troubleshoot and repair the controller, the transmitter must be removed from on-air operation. To reprogram the software, refer to "Software Update – Controller/Exciter" earlier in this document and re-program the transmitter software.

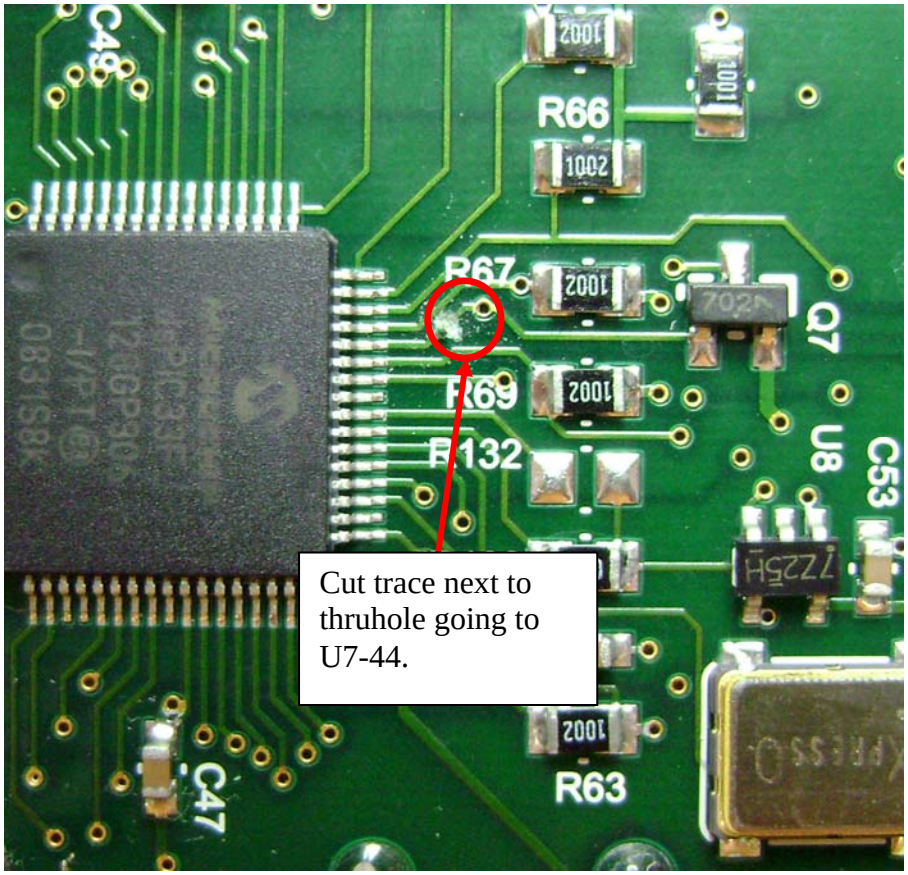
5.2 Failure to download Exciter Board Software

If the exciter download is unsuccessful, a minor board modification may be necessary to allow the software update to successfully complete. This board modification may be required on units, that are not already at exciter software version 1.6 or greater, to allow the transmitter to return to an on-air status after a failed software download. For reference, this board modification will allow a microprocessor reset line to properly operate and not be unduly influenced (held low) by part tolerance issues.

Note: If the download successfully completes, no further action is required and it is recommended that this board modification NOT be implemented.

However, if the exciter software is not already at version 1.6 or greater and the unit refuses to accept the download, the TX will be off the air as the controller will continue to try to send the new code to the exciter. In that case, locate the internal exciter board (part number 919-4000) and cut the trace between U7-44 and a thru hole via. The trace should be cut on the pin 44 side of the via. See photograph.

©2009 Broadcast Electronics Inc.



5.3 Power Supply Fault When Muted or Off

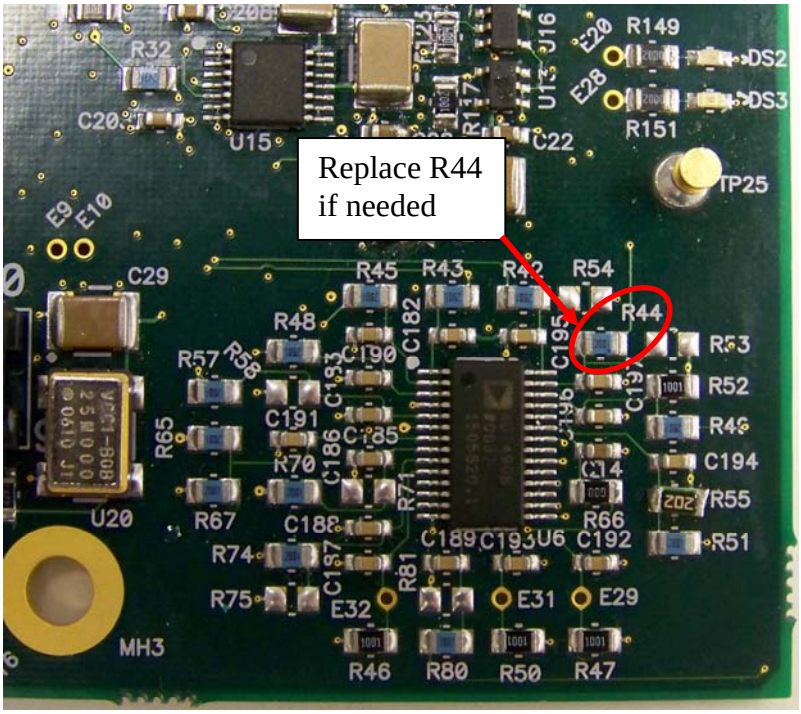
A known issue exists that will manifest itself with a successful update of the controller software, to version 2.0 or greater, if the internal Control board (part number 919-4030) hardware has not been updated with DEV1235 AND the transmitter is equipped with a B+ power supply having part number 540-0016-002. This known issue will affect all STX LP 1KW transmitters, the main PA assembly of an STX LP 3KW transmitter, and the main PA assembly of any STX LP 5KW transmitter that had shipped from the factory prior to October 1, 2009; assuming that these units had not been previously updated in the field.

Issue: After a successful update of the controller software to version 2.0 or greater, a front panel "PS" power supply fault will appear when in the "MUTED" or "OFF" condition if the above requirements are met. When the transmitter is un-muted, the front panel power supply fault will clear.

In the case that your transmitter exhibits a front panel power supply fault while in the "MUTED" or "OFF" condition, after a successful update of the controller software to version 2.0 or greater, there is a solution. Locate the internal control board (part number 919-4030) and replace R44 with a 49.9K Ohm resistor (part number 102-4992). See photograph. Contact the Broadcast Electronics RF Technical Services department for assistance.

©2009 Broadcast Electronics Inc.

Note: If the control board has been successfully updated to software version 2.0 or greater and the front panel power supply fault does not occur when the transmitter is "MUTED" or "OFF", no further action is required.



©2009 Broadcast Electronics Inc.

6 RF Technical Services Contact Information

RF Technical Services -

Telephone: (217) 224-9617
E-Mail: rfservice@bdcast.com
Fax: (217) 224-6258

©2009 Broadcast Electronics Inc.