Lucent Technologies
Bell Labs Innovations

# *4ESS*™ Switch XTSI Software Update Tool

# User's Guide

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### Notice

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# Introduction

The Expanded Time Slot Interchange (XTSI) Software Update (XTSI-SU) tool is an executable program that resides on the 3B attached processor in the *4ESS*™ Switch. The XTSI-SU tool is used to update the software in an XTSI frame via a craft interface on the 3B. The purpose of the XTSI-SU tool is to provide a faster and more user-friendly method for performing software updates to the XTSI frame.

The tool reads a file of XTSI update commands arranged in steps and sends these commands to the 1B processor via a pseudo Input/Output (I/O) link between the 3B and the 1B processor. The responses to the update commands are examined and checked against the expected response. If the expected response is received, the tool continues with the next update command in the step. The Input and Output commands that the XTSI-SU tool is sending to the 1B or 3B processor, are echoed on the respective maintenance channel.

When all steps in the update procedure are executed, the selected XTSI frame will be operating on the new software.

The tool has the following three main parts:

1. ASCII file of XTSI update commands located in */etc/log/1bperfsu/update.cmds*
2. Step data files located in */etc/log/1bperfsu/step.data* and */etc/log/1bperfsu/step.bkup*
3. Executable portion located in */cft/shl/cmds/UPD/XTSI*.

## Step.data and step.bkup Files

The *step.data* and *step.bkup* files are used to track the progress of the update process. These files contain a line of member numbers, the started step, and the completed steps for each of those member numbers. The files are updated with the started step when the update process is started. The completed step is updated when the step successfully completes.

The format of these files is as follows:

*01020304050607080910.....62*
*00000000000000000000.....00*
*00000000000000000000.....00*

This example shows that no updates have been performed on any frame.

# XTSI-SU Tool Steps

The following is a description of each step in the XTSI-SU tool:

**Step 1** Verify the XTSI member number and equipage.

**Step 2** Execute the prxtsihdrs process to dump the 3B file headers and inhibit REX on the 3B. (3B step)

**Step 3** Inhibit REX and stop the peripheral unit exerciser on the 1B processor.

**Step 4** Backup the active XTSI software files.

**Step 5** Copy the 3B files to XTSI location 0.

**Step 6** Update the XTSI SPUs, IBUs, D3Us, and controllers to the new software version.

**Step 7** "Recent change" software pointers to 0.

**Step 8** Allow inhibits on the 3B. (3B step)

**Step 9** Allow inhibits on the 1B processor.

## Flow of Execution of the XTSI-SU Tool

The flow of execution for the XTSI-SU tool is as follows:

1. Examine the input command.
2. Verify that the member number selected is an *even* number between 2 and 62.
3. If this is a 1B processor step:
   Verify that the member number selected is equipped
   Verify that the member number does not contain any out of service units
4. Verify that the step number can be executed (see the *Built In Safety Checks* section for more information).
5. Read the *update.cmds* file for the commands in the selected step, and build a list of all the commands to be executed for this step.
6. Back up the *step.data* file.
7. Update the *step.data* file started step for the member number selected.
8. Send the commands to the 1B processor via a pseudo I/O link from the 3B.
9. Wait for a response or for the message to time out. If the message times out, exit with errors.
10. Examine the response from the 1B processor, checking for success or failure. If *successful*: Send the next command or if this is the last command, update the *step.data* completed step and exit. If *failure*: Exit with errors.

### Built In Safety Checks

The following checks have been built into the XTSI-SU tool to prevent accidental updates that may lead to a service outage:

1. The input is examined for a valid member number between 2 and 62.
2. Step one of the update commands file is executed before starting any step except a 3B step. This step checks that the member number selected is an equipped XTSI frame and that the frame does not contain any out-of-service equipment.
3. The *step.data* file is checked to verify that it is not corrupted.
4. The *step.data* file is read to determine the next step. The step number is NOT input, it is determined for the user.
5. Upon detection of an interrupt, the tool notifies the user that an interrupt has occurred, that the number of the last successful step is output, and execution stops.
6. If Retry Later (RL) or No Good (NG) is returned from the 1B processor on any command, the process pauses for 1 minute and retries the command. If it fails with an RL or NG five times, the process exits with errors.

## Description of the XTSI-SU Tool

To start the XTSI-SU tool, enter a **1300** poke command on the 3B MTC. See Figure 1 for an example of the XTSI-SU screen.

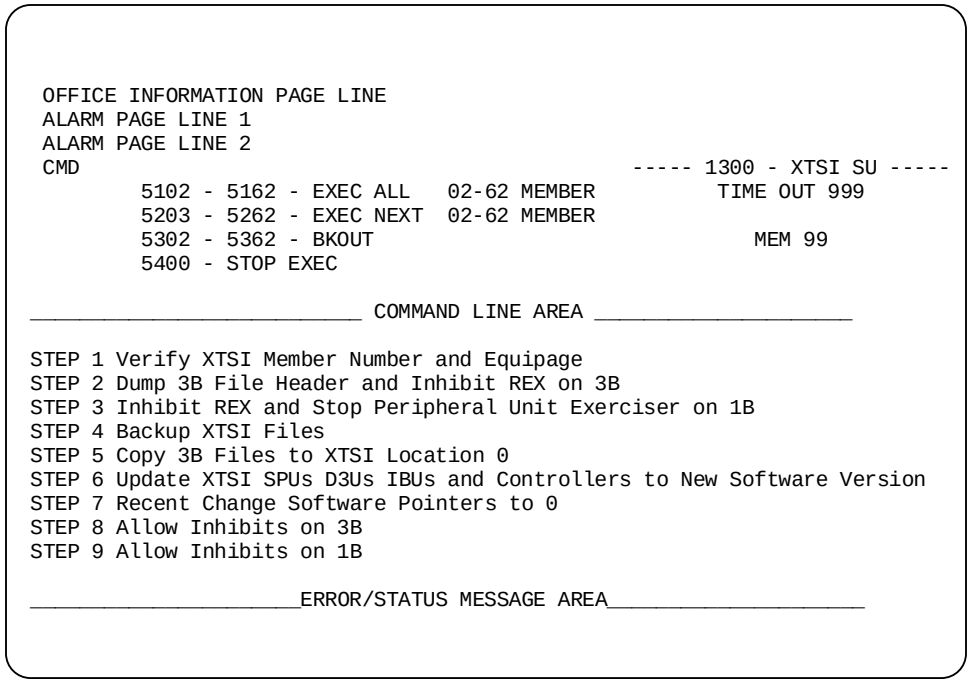


**Figure 1. XTSI-SU 1300 MCC Page After Execution of 51xx or 52xx**

## Screen Displays

The following is a description of the areas that can be found on MCC Page 1300. See Figure 1.

- **System Identification** - area that appears as the first line. All indicators in this area appear white on black.
- **Summary Status** - area that appears as the second and third line. This area provides status indicators for the *4ESS* Switch.
- **COMMAND LINE** - area that appears as the fourth line. All commands are entered at the command line which consists of a prompt area, command area, and a response area. The command line appears in black letters on a green background with only the first 78-characters being displayed.
- **MEM 99** - area that displays the XTSI member number.
- **TIME OUT 999** - area that displays the time it takes for each command that the users sends to the *4ESS* Switch to complete. This timer is decremented every four (4) seconds until either a time out occurs or the step is finished. At this time, the display is set to *0* . When this process is not doing any timing, a *00* will be displayed.

- **1B INTERRUPT MESSAGE AREA** - area that displays all detected 1B interrupts that occur during step processing. Each interrupt output will over write the previous, and will finally display the most severe B-F level interrupt that occurred.
- **ERROR/STATUS MESSAGE AREA** - area that appears as the last line. All error and status messages from the remote maintenance system are received on this 78-character line. Multi-line output from the remote maintenance system will not cause the message area to scroll upward. Instead, each new line overwrites the previous line.

## Screen Communication

There is a group of 9 software steps required to perform the software update. The color schemes used to communicate, to the user, what is happening during each step of the update are:

1. White letters on a black background - step is not started.
2. White letters on a dark blue background - step is in process.
3. Black letters on a light blue background - step is complete.

When errors occur during an XTSI software update procedure, either a warning or an error message is displayed on the *ERROR/STATUS MESSAGE AREA*.

1. White on red - an error has occurred. The user might need to take corrective action or just re-enter the same poke command and continue with the software update procedure.
2. Red on yellow - helpful messages. A step has finished successfully.

## Poke Command Formats

After the XTSI-SU page (1300) has been displayed, the user has 4 different choices of poke commands that can be entered:

**NOTE:**
The 2 high digits of a poke command represents what the user wants to do. The 2 lower digits represent the XTSI member number (even numbers 02-62) which the user is applying the software update changes to.

1. **51xx** - allows **automatic execution mode** of the XTSI-SU tool steps to any XTSI member's hardware. This type of poke command has a range of 5102 - 5162. Once one of these poke commands is entered, the expected result is that when one software update step completes, the next step starts with no user intervention. This process continues until the last step, Step 9, is finished. At this time, the user is required to enter another poke command to start updating another member. If a step does not complete successfully, an error message is displayed. This process forces itself out of the automatic execution mode and expects the user to enter another poke command to continue.

2. **52xx** - allows **step by step mode** of the XTSI-SU tool to any XTSI hardware frame. This type of poke command has a range of 5203 - 5262. When one of these poke commands is entered, the expected result is that when one step completes the next step cannot start until the user enters another poke command. If a step does not complete successfully, an error message is displayed and the user must enter another poke command to continue.

3. **53xx** - allows back out of all previous steps done to a particular XTSI member's hardware. This type of poke command has a range of 5302 - 5362. When one of these poke commands is entered, the expected result is that all previous applied steps have been backed out from the XTSI hardware. The state of the XTSI member numbers hardware shall be as if no software updates had been applied.

   **NOTE:**
   The back out step can only be executed after the successful completion of Step 5.

4. **5400** - stops automatic execution mode. This poke command informs the XTSI-SU tool process that the user does not wish to continue in the automatic execution mode. This type of poke command has a value of 5400. There are no XTSI member numbers associated with this poke command. When this poke command is entered, the XTSI-SU process will not respond until the current step being processed has finished. The user then is expected to enter another poke command to continue with any XTSI software updates. The expected results from this poke command is that automatic execution is turned off. There is no physical display on the 3B's screen to inform the user that this poke command has been accepted. The only way the user can detect that automatic execution mode has been stopped, is when a software update step completes and the next step does not start.

## Steps to Perform Before Executing the XTSI-SU Tool

1. At the 3B MCRT, enter message:

   CMD **DUMP:BWM!**

   List of BWMs will be received.

2. Determine if BWM, associated with this software update, is listed. If the proper BWM is not listed, contact next higher support organization for resolution. Software update must not be performed until proper BWM is applied.

3. At the 3B MCRT, enter message:

   CMD **EXC:ENVIR:UPROC,FN"/tools/prxtsihdrs"!**

   **NOTE:**
   This command will take from 5 to 15 minutes to complete, depending on system call load.

   **/tools/prxtsihdrs** printout will be received.

4. Determine if proper file issue is listed for all version 0 locations. If the file issue is not correct, contact next higher support organization for resolution. Software update must not be performed until the proper file issue is loaded.

5. At the 3B MCRT, remove the *step.data* and *step.bkup* files by entering the following commands:

   CMD **CLR:FILESYS:FILE,FN "/etc/log/1bperfsu/step.data"!**

   MSG **CLR FILESYS FILE COMPLETE** or
   **CLR FILESYS FILE STOPPED rm: step.data non-existent**

   CMD **CLR:FILESYS:FILE,FN "/etc/log/1bperfsu/step.bkup"!**

   MSG **CLR FILESYS FILE COMPLETE** or
   **CLR FILESYS FILE STOPPED rm: step.bkup non-existent**

## Automatic Execution of the XTSI-SU Tool

To perform the Automatic Execution method of the XTSI-SU tool, use the following procedure:

**NOTE:**
As the steps start executing and then complete, the screen will change color. When the steps are in process, they will be highlighted on a dark blue background with white letters. When the steps complete, they will be highlighted on a light blue background with black letters.

1. Enter the following command on MCC page 1300:

   CMD **51**xx
   (where xx = XTSI member number)

   **NOTE:**
   The two lower digits of a poke command identifies the XTSI member number hardware to which the user is applying the software update changes.

2. During the automatic execution of the XTSI-SU Tool, the commands that are executing, will be displayed in the *COMMAND LINE AREA*.

   When the steps complete, the following messages will be displayed:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 1**

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 2**

   and so on until Step 9 is complete.

3. If required, run Unit/Controller diagnostics:
   a. At the 3B MCRT, determine if diagnostic software was changed during this update and if the diagnostics were changed determine which unit type diagnostic was affected (Controller, D3U, IBU, and SPU) (**DUMP:FILE:ALL,FN"/etc/bwm/AAA**xx-xxxx**/SCANS"!**)
   b. If Controller, D3U, IBU, and SPU diagnostic software was changed, perform Step c; otherwise, go to end of procedure.
   c. At the 1B MTC terminal, enter **INH:MACLI,CLASS MTCE;REX!**

d. At 1B MTC terminal, diagnose unit type(s) that was affected by diagnostic software changes (Controllers, D3Us, IBUs, and SPUs) using the restore message.

e. At 1B MTC terminal, enter message: **ALW:MACLI,CLASS MTCE!** to allow REX.

## Step by Step Method of the XTSI-SU Tool

To perform the Step by Step method of the XTSI-SU tool, use the following procedure:

1. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   **NOTE:**
   The two lower digits of a poke command identifies the XTSI member number hardware to which the user is applying the software update changes.

   When Step 1 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 1**

2. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   When Step 2 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 2**

3. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

When Step 3 completes, the following message is displayed on the bottom of the screen:

MSG **REPT:XTSI-SU LAST STEP COMPLETED 3**

4. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   When Step 4 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 4**

5. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   When Step 5 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 5**

6. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   When Step 6 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 6**

7. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   When Step 7 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 7**

8. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

When Step 8 completes, the following message is displayed on the bottom of the screen:

MSG **REPT:XTSI-SU LAST STEP COMPLETED 8**

9. Enter the following command on MCC page 1300:

   CMD **52**xx
   (where xx = XTSI member number)

   When Step 9 completes, the following message is displayed on the bottom of the screen:

   MSG **REPT:XTSI-SU LAST STEP COMPLETED 9**

10. If required, run Unit/Controller diagnostics:

    a. At the 3B MCRT, determine if diagnostic software was changed during this update and if the diagnostics were changed determine which unit type diagnostic was affected (Controller, D3U, IBU, and SPU) (**DUMP:FILE:ALL,FN"/etc/bwm/AAA**xx-xxxx**/SCANS"!**)

    b. If Controller, D3U, IBU, SPU diagnostic software was changed, perform Step c; otherwise, go to end of procedure.

    c. At the 1B MTC terminal, enter **INH:MACLI,CLASS MTCE;REX!**

    d. At 1B MTC terminal, diagnose unit type(s) that was affected by diagnostic software changes (Controllers, D3Us, IBUs, and SPUs) using the restore message.

    e. At 1B MTC terminal, enter message: **ALW:MACLI,CLASS MTCE!** to allow REX.

## Backout Method of the XTSI-SU Tool

Use the following steps to run the Backout procedure:

1. On MCC page 1300, enter the following command:

   CMD **53**xx
   (where xx = XTSI member number)

   **NOTE:**
   During the backout procedure, the steps in the *COMMAND LINE AREA* do not highlight and remain white on black.

2. Although other messages may be seen, the following message will be displayed after ALL steps have been backed out:

   MSG **REPT:XTSI-SU BACKOUT STEP COMPLETED FOR MEMBER XX**

3. The pointers must now be reset. If you do not reset the pointers, and you rerun the software update, it will time out on Step 4 of the Software Update Tool procedure. Use the following steps to change the pointers:

   **NOTE:**
   Calling up the RC form will cause all CRT data to be cleared.

   3.1 At the 1B MTC, enter message:

   MSG **OP:RCFORM 705!**

   RC Form 705 will be displayed.

   3.2 Fill in the blanks on RC Form 705 per the information in Table 1.

**Table 1.**

| MESSAGE NUMBER | OUTPUT MESSAGE |
|---|---|
| 1 | **RC:UTYPE;CHG;OPT(SUXTSI),***a*: **XTSI MEMN** *b*,<br><br>**ORNU** *c*,<br><br>**XTCN 0 1**<br>**XTCHV** _,_,<br>**XTCSV** *e*,*e*,<br><br>**CSP PUBI GRAM CIA ALF EXEC**<br>**XTC0 PACKS** *f,g,_,_,_,g,*<br>**XTC1 PACKS** *f,g,_,_,_,g,*<br>**INBAND ENABLED** _,<br><br>**IBUEQ h,**<br>**IBUHV** _,<br>**IBUSV e,**<br><br>**D3UN 0 1 2 3 4 5 6 7**<br>**D3UEQ i,i,i,i,i,i, i,i,**<br>**D3UHV** _,_,_,_,_,_, _,_,<br>**D3USV** *i,i,i,i,i,i, i,i,*<br><br>**SPUN 0 1 2 3 4 5 6 7 8 9 10 11**<br>**SPUEQ j,j,j,j,j,j,j,j,j,j, j, j,**<br>**SPUHV** _,_,_,_,_,_,_,_,_,_, _, _,<br>**SPUSV e,e,e,e,e,e,e,e,e,e, e, e,**<br>**REMARKS ----------!** |

a = **FTA**
b = XTSI member number
c = RC order number
d = **0** for fields in XTCSV, and D3USV
e = the software version (0=new, 1=last current) of XTC/D3U/IBU/SPU which should be set alike
f = shows presence of CSPs (0=absent, 1=present)
g = must all equal 1(=new packcode) if *b* (CSPs) equals 1; otherwise can be all 0(=old packcode) or all 1
h = optional IBU equipage (U=UNEQ, G=GROW, S=SGRO, O=OPER)
i = the D3U equipage (U=UNEQ, G=GROW, S=SGRO, O=OPER) used in the basic configuration
j = the SPU equipage (U=UNEQ, G=GROW, S=SGRO, O=OPER) to define which if any SPUs are OPER state

3.3 Was the **RC ORNU** b **ACTIVATED** message received? If **yes**, continue with the procedure. If **no**, determine the cause for rejection and repeat from Step 3.1 with the correct input message.

3.4 At the 1B MTC terminal, enter message per Table 2 for the even numbered XTSI being updated.

**Table 2.**

| MESSAGE NUMBER | INPUT MESSAGE |
|---|---|
| 1 | **VER:VFUNC SUXTSI:FD1 XTSIMEMN,DT1** ***a*****!** |
| a = XTSI member number | |

3.5 Are the message format and member identification correct per Table 3. If **yes**, continue with the procedure.
If **no**, determine the cause and resolve, then continue with the procedure.

**Table 3.**

| MESSAGE NUMBER | OUTPUT MESSAGE |
|---|---|
| 1 | **VER:MISC;OPT(SUXTSI): XTSI MEMN** *a*,<br><br>**XTCN 0 1**<br>**XTCHV _,_,**<br>**XTCSV b,b,**<br><br>**CSP PUBI GRAM CIA ALF EXEC**<br>**XTC0 PACKS** *c,d,_,_,_,d,*<br>**XTC1 PACKS** *c,d,_,_,_,d,*<br>**INBAND ENABLED _,**<br><br>**IBUEQ e,**<br>**IBUHV _,**<br>**IBUSV b,**<br><br>**D3UN 0 1 2 3 4 5 6 7**<br>**D3UEQ f,f,f,f,f,f, f,f,**<br>**D3UHV _,_,_,_,_,_, _,_,**<br>**D3USV b,b,b,b,b,b, b,b,**<br><br>**SPUN 0 1 2 3 4 5 6 7 8 9 10 11**<br>**SPUEQ g,g,g,g,g,g,g,g,g,g, g, g,**<br>**SPUHV _,_,_,_,_,_,_,_,_,_, _, _,**<br>**SPUSV b,b,b,b,b,b,b,b,b,b, b, b,** |
| a = XTSI member number<br>b = the software version (0=new, 1=last current) of XTC/D3Us/IBUs/SPUs which should be set alike<br>c = shows presence of CSPs (0=absent, 1=present)<br>d = must all equal 1(=new packcode) if *b* (CSPs) equals 1; otherwise can be all 0(=old packcode) or all 1<br>e = optional IBU equipage (U=UNEQ, G=GROW, S=SGRO, O=OPER)<br>f = the D3U equipage (U=UNEQ, G=GROW, S=SGRO, O=OPER) used in the basic configuration<br>g = the SPU equipage (U=UNEQ, G=GROW, S=SGRO, O=OPER) to define which if any SPUs are OPER state | |

3.6 Using the printout and Table 3, verify XTCSV, D3USV and SPUSV (if equipped) fields have been set back to 0. If they are not, determine the cause for rejection and repeat from Step 3.1 with correct input message.

# Messages

## Error Messages

The following are the output messages that may be received on the ROP during processing. A small description is included for each message where needed. The references to either NOTE 1 or NOTE 2 at the end of the message, indicates what to do if an error occurs. For more information, see the *4ESS APS Output Messages Manual, OM-4A001.01 Vol. IV:*

**NOTE 1** Re-enter the same message that failed. If the same error occurs, seek technical assistance.

**NOTE 2** Seek technical assistance.

*** REPT XTSI-SU UPDATE COMMAND IS NOT INSTALLED CORRECTLY:**
(See NOTE 2).

*** REPT XTSI-SU STEP NUMBER REQUIRED:**
You must enter a step number. (See NOTE 1).

*** REPT XTSI-SU MEMBER NUMBER MUST BE EVEN AND BETWEEN 2 AND 62:**
(See NOTE 1).

*** REPT XTSI-SU c FILE HAS BEEN CORRUPTED:**
The *c* file has either been corrupted or removed. (See NOTE 2).

*** REPT XTSI-SU UPDATE PROCESS ALREADY RUNNING:**
A step is currently being executed and only one update process is allowed to run at a time.

*** REPT XTSI-SU ERROR GETTING PORT:**
The update process failed to connect to a port. (See NOTE 2).

*** REPT XTSI-SU CANNOT OPEN CHANNEL TO 1B PROCESSOR:**
The update process was unsuccessful in connecting to the 1B processor via 1bpsudio. (See NOTE 2).

*** REPT XTSI-SU CANNOT CONNECT TO 1B PROCESSOR:**
1bsudio failed in connecting to the 1B processor. (See NOTE 2).

*** REPT XTSI-SU ERROR - INCOMPATIBLE WITH 1B GENERIC:**
The request for permission to execute 1B processor commands from the 3B was denied. It is possible that the 1B processor is not in the correct generic. 1B processor must be in 4E22 or later generic. (See NOTE 2).

*** REPT XTSI-SU ERROR SENDING MESSAGE TO THE 1B:**
The message sent by the update process did not successfully reach the 1B processor for processing. (See NOTE 1).

*** REPT XTSI-SU STEP FAILED BEFORE COMPLETING:**
The current step has not completed and the update process has died. (See NOTE 1).

*** REPT XTSI-SU ENCOUNTERED 1B A-LEVEL INTERRUPT:**
During processing, the update process detected a 1B a-level interrupt. (See NOTE 1).

*** REPT XTSI-SU ENCOUNTERED 1B B-LEVEL INTERRUPT:**
During processing, the update process detected a 1B b-level interrupt. (See NOTE 1).

*** REPT XTSI-SU ENCOUNTERED 1B C-LEVEL INTERRUPT:**
During processing, the update process detected a 1B c-level interrupt. (See NOTE 1).

*** REPT XTSI-SU ENCOUNTERED 1B D-LEVEL INTERRUPT:**
During processing, the update process detected a 1B d-level interrupt. (See NOTE 1).

*** REPT XTSI-SU ENCOUNTERED 1B E-LEVEL INTERRUPT:**
During processing, the update process detected a 1B e-level interrupt. (See NOTE 1).

*** REPT XTSI-SU ENCOUNTERED 1B F-LEVEL INTERRUPT:**
During processing, the update process detected a 1B f-level interrupt. (See NOTE 1).

*** REPT XTSI-SU LAST STEP COMPLETED d:**
The *d* was the last step to be completed by the update process.

*** REPT XTSI-SU BAD CREATE ON RESPONSE FILE FOR MESSAGE e:**
The update process was unable to create the response file to capture the 1B processor response to the input message sent. The *e* is the first 15 characters in the input message being sent to the 1B processor. (See NOTE 1).

*** REPT XTSI-SU CANNOT SEND MESSAGE e:**
The update process was unable to send the message to the 1B processor. The *e* is the first 15 characters in the input message being sent to the 1B processor. (See NOTE 1).

*** REPT XTSI-SU BAD 1B CONNECTION ON MESSAGE e:**
The update process was unable to send the message to the 1B processor due to a bad connection. The *e* is the first 15 characters in the input message being sent to the 1B processor. (See NOTE 1).

*** REPT XTSI-SU 1B RESPONSE TIMEOUT ON MESSAGE e:**
A response from the 1B processor was not received before the time-out value for the message sent to the 1B processor expired. The *e* is the first 15 characters in the input message being sent to the 1B processor. (See NOTE 1).

*** REPT XTSI-SU BAD 1B RESPONSE ON MESSAGE e:**
The response received from the 1B processor was not the response expected. The *e* is the first 15 characters in the input message being sent to the 1B processor. (See NOTE 1).

*** REPT XTSI-SU ERROR - 1B NOT IN UPDATE MODE ON MSG e:**
Permissions for the update process to execute the commands in the */etc/log/1bperfsu/update.cmds* file were not set up or have been canceled for some reason. The *e* is the first 15 characters in the input message being sent to the 1B processor. (See NOTE 2).

*** REPT XTSI-SU MEMBER NUMBER a CONTAINS OUT OF SERVICE EQUIP:**
The frame given contains some out of service equipment and no processing can be done on such a frame. The *a* is the member number requested. (See NOTE 2).

*** REPT XTSI-SU INVALID MEMBER NUMBER a ENTERED:**
The member number entered, *a*, was an unequipped frame on this switch. (See NOTE 1).

*** REPT XTSI-SU ECHO 1B OUTPUT MESSAGE:**
This will echo the 1B processor output message in response to the input message sent to the 1B processor.

*** REPT XTSI-SU RETRIED MESSAGE: BUT FAILED ON e:**
The update process tried to send the input message five times and received an RL or NG each time on message *e*. (See NOTE 2).

*** REPT XTSI-SU ERROR OPENING f FILE:**
There was an error when the update process attempted to open the *f* file. (See NOTE 2).

*** REPT XTSI-SU ERROR g READING f FILE:**
There was an error, *g*, when the update process attempted to read the *f* file. See the *4ESS APS Output Messages Manual, OM-4A001.01 Vol. IV.* for further details on error *g*.

*** REPT XTSI-SU ERROR READING f FILE, INVALID STEP:**
The step that was requested was not found in the */etc/log/1bperfsu/update.cmds* file, and is therefore invalid. (See NOTE 2).

*** REPT XTSI-SU ERROR CREATING f FILE:**
There was an error when the update process attempted to create *f* file. (See NOTE 1).

*** REPT XTSI-SU ERROR - PREVIOUS STEPS MUST BE EXECUTED FIRST:**
The step requested was not the next step to be executed. The user must execute the steps in order.

*** REPT XTSI-SU ERROR - STEP ALREADY STARTED, h IS NEXT STEP TO EXECUTE:**
The step requested has already been executed and the h is the next step to be executed.

*** REPT XTSI-SU ERROR - PREVIOUS STEP NOT COMPLETE, SEE USERS GUIDE:**
This indicates that the step prior to the step requested has not completed. The user must verify that the previous step is complete (has been manually completed) or can be run again.

*** REPT XTSI-SU: k ERROR IN l ERRNO m:**
See the *4ESS APS Output Messages Manual, OM-4A001.01 Vol. IV.* under REPT LSNC: k ERROR IN l ERRNO: *m*.

*** REPT XTSI-SU: ILLEGAL CSFS CONVERSION ATTEMPT:**
The update process tried to convert an address to read the 1afile and failed. (See NOTE 2).

*** REPT XTSI-SU: CSFS ARGS: GEN = n Addr = o:**
This message comes out with the ILLEGAL CSFS CONVERSION message and gives the generic in *n* and the address that was to be converted in *o*. (See NOTE 2).

*** REPT XTSI-SU ERROR - FINAL STEP ALREADY COMPLETED:**
The final step (Step 9) has already been run. No other work needs to be done to update the requested member.

## End-of-Job Messages

The following are the output messages that may be received on the ROP when the update process has completed or failed. A small description is included for each message in the Error Messages Section. For more information, see the *4ESS APS Output Messages Manual, OM-4A001.01 Vol. IV:*

* REPT XTSI-SU USAGE:  UPD:XTSI, MEM a, STEP b
* REPT XTSI-SU UPDATE COMMAND IS NOT INSTALLED CORRECTLY
* REPT XTSI-SU UNK ARG - USAGE:  UPD:XTSI, MEM a, STEP b
* REPT XTSI-SU MEM NUMBER REQUIRED
* REPT XTSI-SU STEP NUMBER REQUIRED
* REPT XTSI-SU MEMBER NUMBER MUST BE EVEN AND BETWEEN 2 AND 62
* REPT XTSI-SU c FILE HAS BEEN CORRUPTED
* REPT XTSI-SU UPDATE PROCESS ALREADY RUNNING
* REPT XTSI-SU ERROR GETTING PORT
* REPT XTSI-SU CANNOT OPEN CHANNEL TO 1B PROCESSOR
* REPT XTSI-SU CANNOT CONNECT TO 1B PROCESSOR
* REPT XTSI-SU ERROR - INCOMPATIBLE WITH 1B GENERIC
* REPT XTSI-SU LAST STEP COMPLETED d
* REPT XTSI-SU MEMBER NUMBER a CONTAINS OUT OF SERVICE EQUIP
* REPT XTSI-SU INVALID MEMBER NUMBER a ENTERED
* REPT XTSI-SU ERROR OPENING f FILE
* REPT XTSI-SU ERROR g READING f
* REPT XTSI-SU ERROR READING f FILE , INVALID STEP
* REPT XTSI-SU ERROR CREATING f FILE
* REPT XTSI-SU ERROR - PREVIOUS STEPS MUST BE EXECUTED FIRST
* REPT XTSI-SU ERROR - STEP ALREADY STARTED, h IS NEXT STEP TO EXECUTE
* REPT XTSI-SU ERROR - PREVIOUS STEP NOT COMPLETE, SEE USERS GUIDE
* REPT XTSI-SU ERROR - FINAL STEP ALREADY COMPLETED

## XTSI-SU Tool Manual Steps

The following steps are the actual steps which make up the XTSI-SU tool:

1. Verify XTSI member number and equipage

   MSG **VER:VFUNC SUXTSI:FD1 XTSIMEMN,DT1 bb!**

   Response: **COMPLETE**

   MSG **OP:OOSUNITS!**

   Response: **OOSUNITS**

2. Dump the 3B file headers and inhibit REX on the 3B

   MSG **EXC:ENVIR:UPROC,FN \"/tools/prxtsihdrs\"!**

   Response: **OK**

   MSG **INH:DMQ;SRC REX!**

   Response: **OK**

3. Inhibit REX and stop the peripheral unit exerciser on the 1B processor

   MSG **INH:MACLI,CLASS MTCE;REX!**

   Response: **OK**

   MSG **STOP:TEST;PUSYS!**

   Response: **OK**

4. Backup the active XTSI software files

   MSG **COPY:TSIFILE;XTSI bb,SFN 0,DFN 1!**

   Response: **COMPLETE**

   MSG **COPY:TSIFILE;XTSI bb,SFN 4,DFN 5!**

   Response: **COMPLETE**

   MSG **COPY:TSIFILE;XTSI bb,SFN 8,DFN 9!**

   Response: **COMPLETE**

   MSG **COPY:TSIFILE;XTSI bb,SFN 12,DFN 13!**

   Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 16,DFN 17!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 20,DFN 21!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 24,DFN 25!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 28,DFN 29!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 32,DFN 33!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 36,DFN 37!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 40,DFN 41!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 44,DFN 45!**

Response: **COMPLETE**

MSG **RC:UTYPE;CHG;OPT(SUXTSI),FTA:XTSI MEMN bb,**
**ORNU 010101,XTCN 0 1 XTCHV _,_,XTCSV 1,1,CSP PUBI GRAM**
**CIA ALF EXEC,XTC0 PACKS d, f, _, _, _, f ,**
**XTC1 PACKS d, f, _, _, _, f ,INBAND ENABLED _,IBUEQ _,**
**IBUHV _,IBUSV 1,DS3UN 0 1 2 3 4 5 6 7 D3UEQ _,_,_,_,_,_,_,_,**
**D3UHV _,_,_,_,_,_,_,_,D3USV 1,1,1,1,1,1,1,1,**
**SPUN 0 1 2 3 4 5 6 7 8 9 10 11 SPUEQ _,_,_,_,_,_,_,_,_,_,_,_,**
**SPUHV _,_,_,_,_,_,_,_,_,_,_,_,SPUSV 1,1,1,1,1,1,1,1,1,1, 1, 1,**
**REMARKS Changing Software Version Pointer to 1!**

Response: **ACTIVATED**

MSG **VER:VFUNC SUXTSI:FD1 XTSIMEMN,DT1 bb!**

Response: **COMPLETE**

5. Copy the 3B files to XTSI location 0

   MSG **COPY:XTSI bb,XTC,FDT,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,XTC,OPR,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,XTC,DGN,SVN 0,DVN 0!**
   **Response: COMPLETED**

   MSG **COPY:XTSI bb,D3U,OPR,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,D3U,DGN,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,SPU,OPR,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,SPU,DGN,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,XTC,CSP,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,IBU,OPR,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,IBU,DGN,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,IBU,XRCVR,SVN 0,DVN 0!**
   Response: **COMPLETED**

   MSG **COPY:XTSI bb,IBU,TST,SVN 0,DVN 0!**
   Response: **COMPLETED**

6. Update the XTSI SPUs, IBUs, D3Us and controllers to the new software version

   MSG **UPD:XTSI bb,IBU,SVN 0!**

   Response: **COMPLETED**

   MSG **UPD:XTSI bb,D3U cc,SVN 0!**

   Response: **COMPLETED**

   MSG **UPD:XTSI bb,SPU d,SVN 0!**

   Response: **COMPLETED**

   MSG **UPD:XTSI bb,XTC,SVN 0!**

   Response: **COMPLETED**

   MSG **OP:OOSUNITS!**

   Response: **OOSUNITS**

7. Recent change software pointers to 0

   MSG **RC:UTYPE;CHG;OPT(SUXTSI),FTA:XTSI MEMN bb,**
   **ORNU 020202,XTCN 0 1 XTCHV _,_,XTCSV 0,0,CSP PUBI GRAM**
   **CIA ALF EXEC,XTC0 PACKS d, f, _, _, _, f ,**
   **XTC1 PACKS d, f, _, _, _, f ,INBAND ENABLED _,**
   **IBUEQ _,IBUHV _,IBUSV 0,DS3UN 0 1 2 3 4 5 6 7**
   **D3UEQ _,_,_,_,_,_,_,_,D3UHV _,_,_,_,_,_,_,_,**
   **D3USV 0,0,0,0,0,0,0,0,SPUN 0 1 2 3 4 5 6 7 8 9 10 11**
   **SPUEQ _,_,_,_,_,_,_,_,_,_,_,_,SPUHV _,_,_,_,_,_,_,_,_,_,_,_,**
   **SPUSV 0,0,0,0,0,0,0,0,0,0, 0, 0,**
   **REMARKS Changing Software Version Pointer to 0!**

   Response: **ACTIVATED**

   MSG **VER:VFUNC SUXTSI:FD1 XTSIMEMN,DT1 bb!**

   Response: **COMPLETE**

8. Allow inhibits on the 3B

   MSG **ALW:DMQ;SRC REX!**

   Response: **ENABLED**

9. Allow inhibits on the 1B processor

   MSG **ALW:MACLI,CLASS MTCE!**

   Response: **OK**

(B) Backout update (change software version to **1**)

MSG **RC:UTYPE;CHG;OPT(SUXTSI),FTA:XTSI MEMN bb, ORNU 999999,XTCN 0 1 XTCHV _,_,XTCSV 1,1,CSP PUBI GRAM CIA ALF EXEC,XTC0 PACKS d, f, _, _, _, f , XTC1 PACKS d, f, _, _, _, f ,INBAND ENABLED _,IBUEQ _, IBUHV _,IBUSV 1,DS3UN 0 1 2 3 4 5 6 7 D3UEQ _,_,_,_,_,_,_,_, D3UHV _,_,_,_,_,_,_,_,D3USV 1,1,1,1,1,1,1,1, SPUN 0 1 2 3 4 5 6 7 8 9 10 11 SPUEQ _,_,_,_,_,_,_,_,_,_,_,_, SPUHV _,_,_,_,_,_,_,_,_,_,_,_, _, _,SPUSV 1,1,1,1,1,1,1,1,1,1,1,1, 1, 1, REMARKS Changing Software Version Pointer to 1!**

Response: **ACTIVATED**

MSG **UPD:XTSI bb,IBU,SVN 0!**

Response: **COMPLETED**

MSG **UPD:XTSI bb,SPU cc,SVN 1!**

Response: **COMPLETED**

MSG **UPD:XTSI bb,D3U d,SVN 1!**

Response: **COMPLETED**

MSG **UPD:XTSI bb,XTC,SVN 1!**

Response: **COMPLETED**

MSG **COPY:TSIFILE;XTSI bb,SFN 1,DFN 0!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 5,DFN 4!**

Response; **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 9,DFN 8!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 13,DFN 12!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 17,DFN 16!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 21,DFN 20!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 25,DFN 24!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 29,DFN 28!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 33,DFN 32!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 37,DFN 36!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 41,DFN 40!**

Response: **COMPLETE**

MSG **COPY:TSIFILE;XTSI bb,SFN 45,DFN 44!**

Response: **COMPLETE**

MSG **OP:OOSUNITS!**

Response: **OOSUNITS**

MSG **VER:VFUNC SUXTSI:FD1 XTSIMEMN,DT1 bb!**

Response: **COMPLETE**

# How Are We Doing?

Document Title: ***4ESS***™ **Switch XTSI Software Update Tool User's Guide**

**Document No.: 234-160-210AC Issue 1 Date: December 1998**

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