



# **TOTALFLOW**

## ***Technical Bulletin 99***

### **Xseries EPROM and FLASH Upgrade Procedure**

#### **Totalflow Technical Bulletin**

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## **Outline for Changing “Flash” and “Eprom” in an XFC Flow Computer Unit**

### Outline of Procedures Covered in this Bulletin:

- 1) Laptop setup Configuration
- 2) Totalflow “Flash Loader Program” Configuration
- 3) XFC Flow Data Collection & XFC Configuration Save
- 4) Deleting the “S” Drive
- 5) Removing Station Files from the “R” Drive
- 6) Eprom Removal & Installation
- 7) Downloading the new “Flash” to the XFC
- 8) Station File Download



NOTE: EPROM/Flash upgrades require the unit be cold started. This action causes all historical and set-up data to be lost. The following steps save information to assist the user when re-configuring the device after a cold start. Flash changes alone do not always require a cold start. Consult ABB for specifics.

## PROCEDURE FOR CHANGING FLASH AND EPROM IN XFC:

**Before beginning this procedure, some “One Time” configurations are required.**

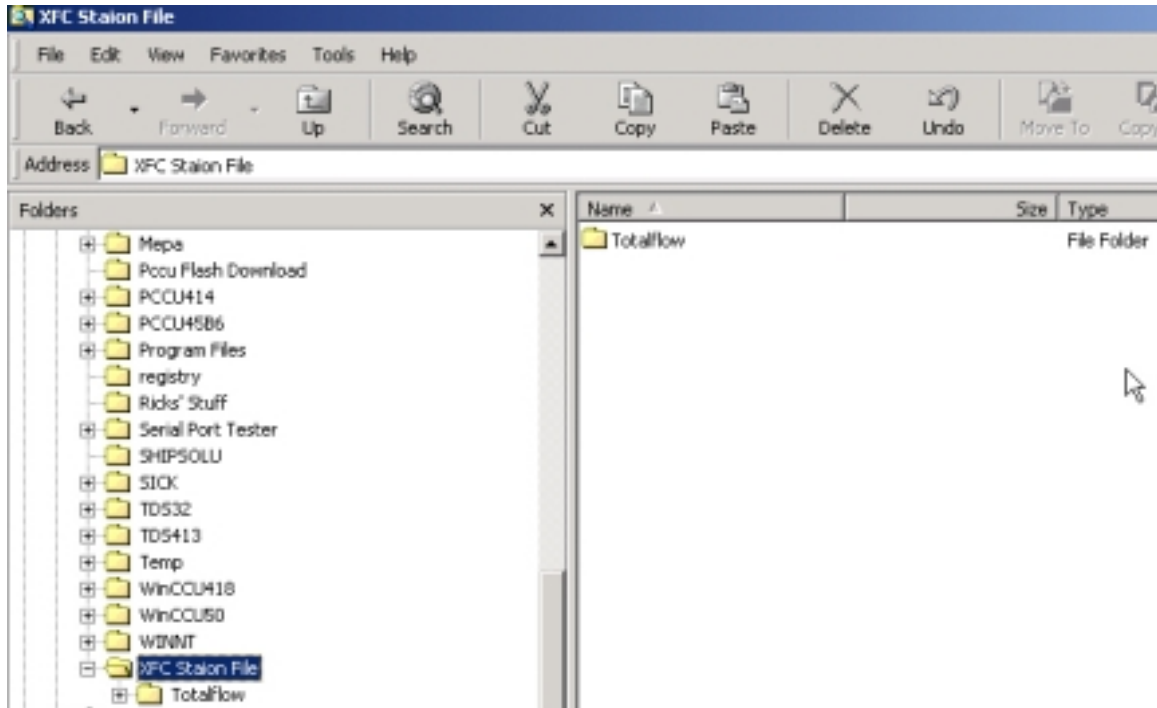
### **1) Laptop setup Configuration**

Make a “New Folder” on “C” drive and name this folder “PCCU Flash Download”.

Copy the 2100xxx-xxx.s19 file that was provided into the new “PCCU Flash Download” Folder.

Make another “New Folder” on “C” drive and name this folder “XFC Station File”.

From the diskette provided, copy the contents of the diskette to the new “XFC Station File” Folder. The content of the diskette has a folder called **Totalflow**; copy the entire folder as it is to the “XFC Station File” Folder.



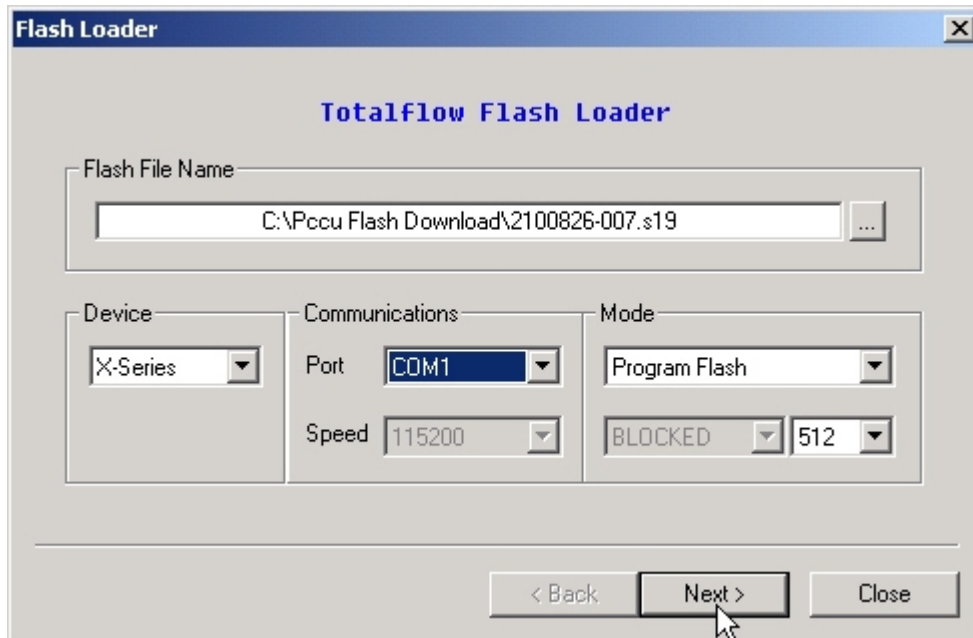
## **2) Totalflow “Flash Loader Program” Configuration**

On the laptop, go to “Start”, then “Programs”, then Totalflow PCCU32 (Version 4.5 Build 25, as of this date), and click on “Flash Loader”

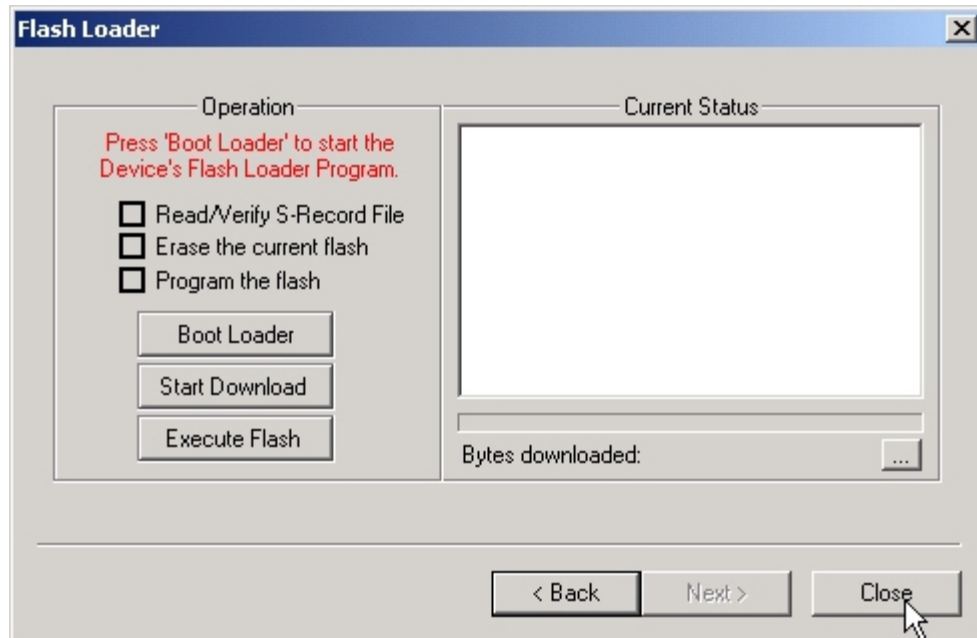
### **Flash Loader screen setup**

- A) Click the “Browse” button and point the “Flash File Name” window to the “PCCU Flash Download” folder you created earlier on your “C” drive and select the  
  
2100xxx-xxx.19 file.
- B) Set “Device” window to “X-Series”
- C) Set “Communications” window to “COM 1” (if this is your laptop serial port)

D) Set “Mode” window to “Program Flash” and ‘512”



E) Click on “Next” button when done.



F) No set up is required on this screen at this time, but this screen must be opened. Now click on the “Close” button

G) Flash Loader Program is now configured to download to the XFC.

This completes the laptop configurations needed before starting our download procedure. These configurations need only be done once.

### **We now begin the procedure to change the Flash and EPROM in the XFC.**

This procedure will remove ALL FLOW DATA from the XFC, be sure and collect all flow data before starting. Do an “all data” collect.

3) XFC Flow Data Collection & XFC Configuration Save

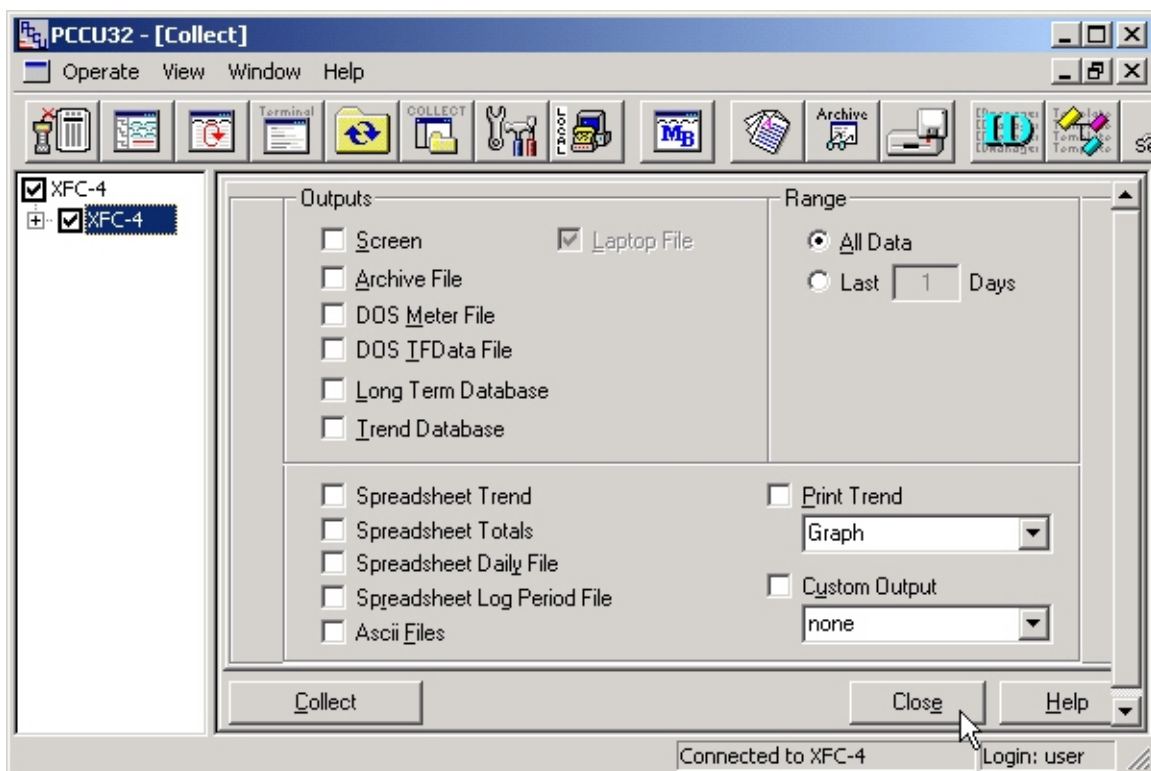
## Start up PCCU32

### Attach PCCU cable to XFC

Click on the “Connect to Totalflow” Icon.

Click on “Collect Historical Data” button

From the “Collect” screen, under “Range” select “All Data”



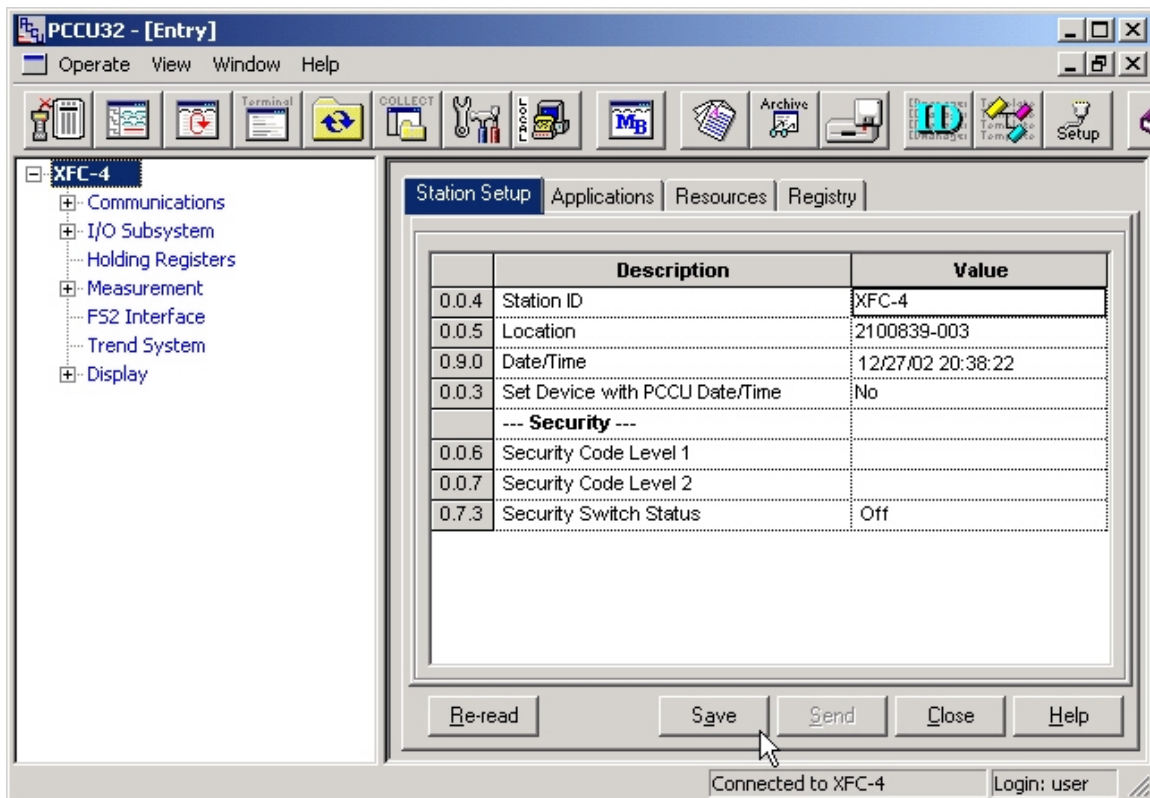
Click on the “Collect” button

When data collection is complete, click on the “Close” button.

Next, click on the “entry” button.

Now the XFC configuration files need to be saved.

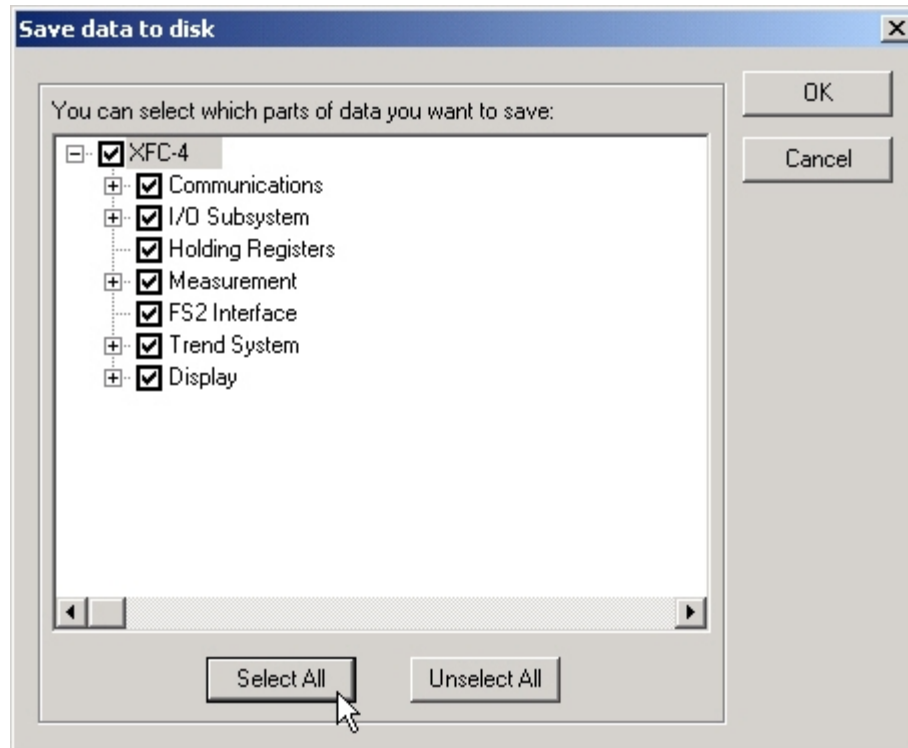
Click on the “save” button at the bottom of screen to save the XFC configuration.



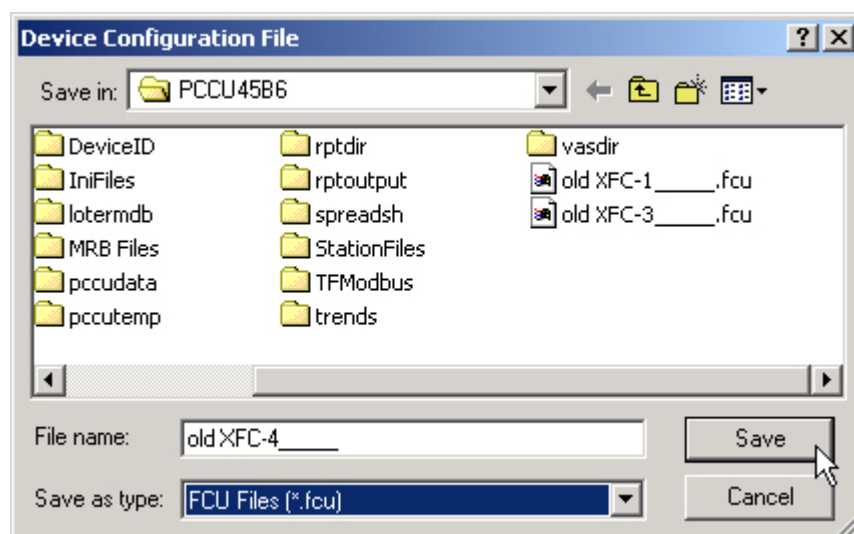
Click on the “select all” button to save the entire XFC configuration. If a box is left unchecked, then that item will be omitted from the saved file. Now click the “OK”

button.

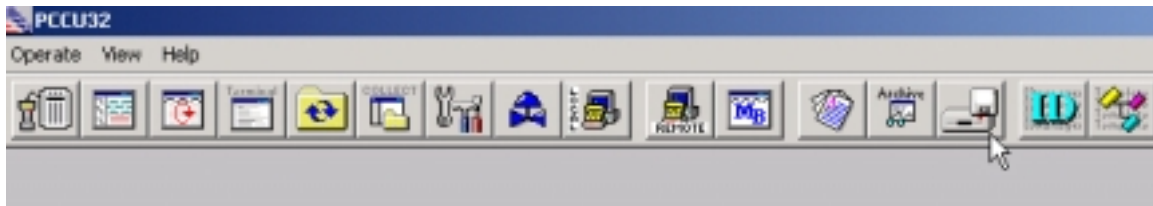




When "XFC configuration save" is complete, the screen below will appear. The "Save in" window will point to the root directory of PCCU 32, unless you specify another location. Name the **.fcu** file as "old meterid.fcu"; ex: old XFC-4.fcu; then click on the Save" button.



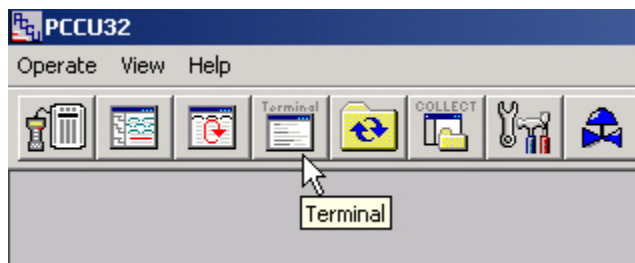
This saved XFC configuration file can be viewed at any time by clicking on the “Open Configuration File” Icon shown below. This feature may be useful later when reconfiguring the XFC after the Flash and Eprom has been changed to review the specific parameters of the XFC. **Do not download the “old saved configuration” file into the XFC with the new Flash and Eprom; it is to be used for viewing only.**



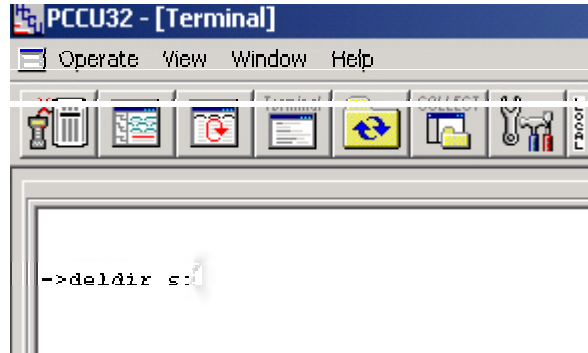
#### 4) Deleting the “S” Drive

This procedure will delete the “Station Files” from the “S” drive.

With the “XFC configuration file” save complete, click on the “Terminal” icon.

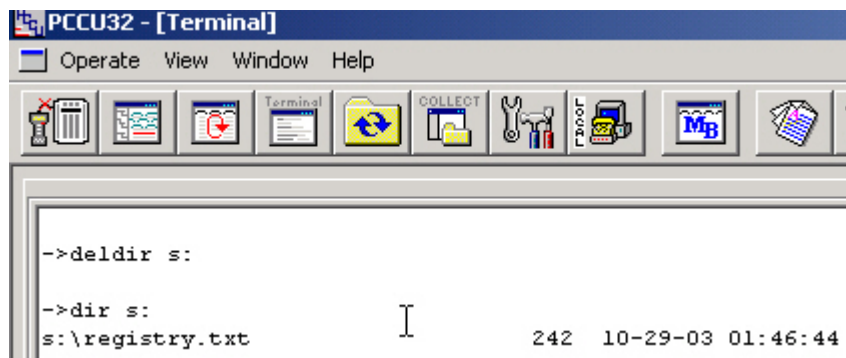


From Terminal window, when the terminal prompt appears (→ ), type **deldir s:** then press **enter**. Wait for the (→ ) to reappear, it may take a few seconds. This will delete the “S” drive. **Note, there is a “space” between deldir and s:**



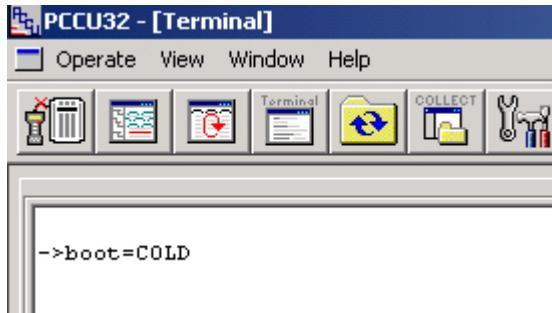
To verify that the S: drive is deleted, from the “Terminal” (→) prompt, type **dir s:**

**Note, there is a space between dir and s:**



## 5) Removing Station Files from the “R” Drive

While still at the terminal prompt, type **boot = COLD** then press “enter” (no space between the word **boot**, the **equal sign** and the word **Cold**). On the XFC display will appear “COLD BOOT.” Immediately after, the XFC display will appear with XSeries Flow Computer on the top line and 2100xxx-xxx (COPYRIGHT) on the bottom line.



Close the "Terminal" window

Close PCCU32 completely. Leave the PCCU cable attached to XFC.

Remove the solar panel connection from the XFC board.

Remove the battery connection from the XFC.

## 6) Eprom Removal & Installation

This procedure will provide a compatible Eprom for the new Flash to be installed.

**Please familiarize yourself with the EPROM Puller and the XFC EPROM before beginning this procedure.**

Using an "EPROM Pulling Tool" shown below, remove the XFC Eprom from the socket. Insert the "legs" of the puller in the top left and bottom right corners of the Eprom socket, squeeze and pull straight out.



**The Eeprom will function only if installed correctly. The Eeprom is square with 3 corners cut at 90-degree angle and one corner cut at a 45-degree angle. The corner with the 45-degree angled cut must be installed with this 45-degree angle in the lower left hand corner of the socket. The Eeprom should install easily. If not, then inspect the Eeprom and socket and retry to install. Slight pressure is all that is needed to install the Eeprom. Do not use a hammer, chisel, punch, pry bar, hammer drill, etc.**

Proceed after the Eeprom is install properly.

## **7) Downloading the new flash to the XFC**

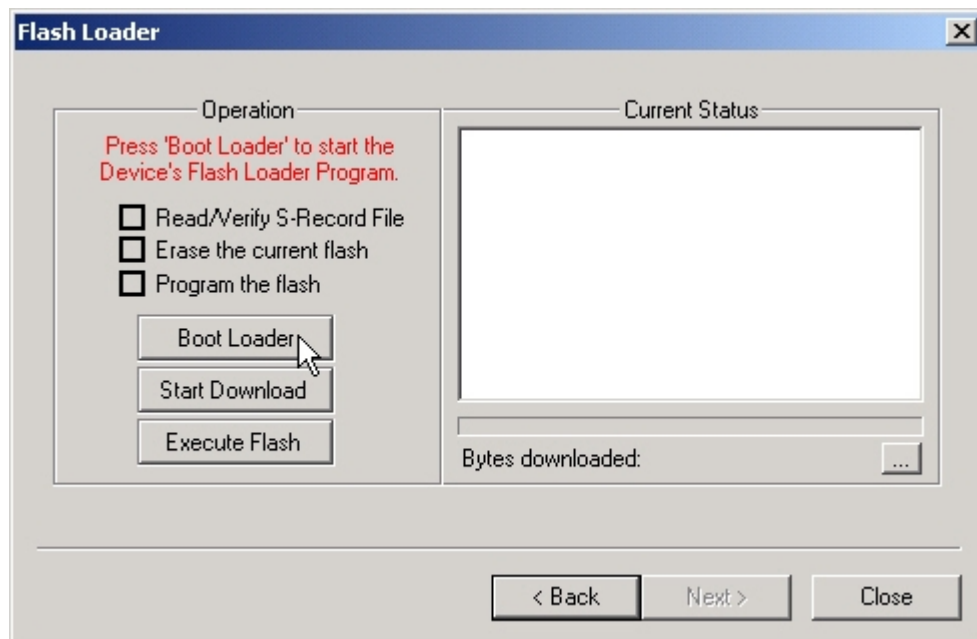
Connect the battery connection to the XFC board.

Connect the solar panel connection to the XFC board.

**DO NOT start up PCCU32.**

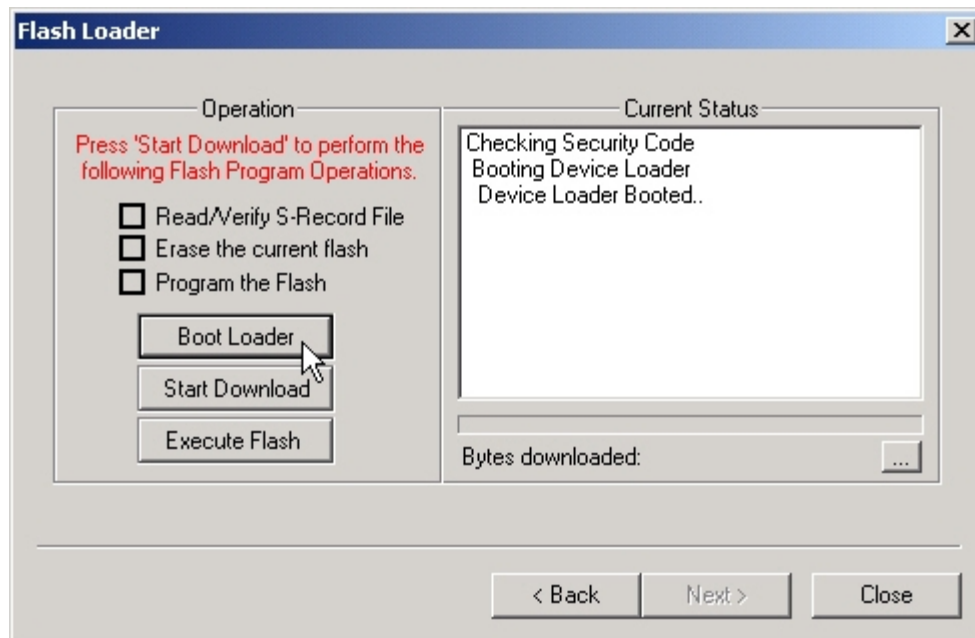
The PCCU cable should still be connected to the XFC.

- A) On the laptop, go to “Start”, then “Programs”, then Totalflow PCCU32 (Version 4.5 Build 25, as of this date) and click on “Flash Loader”.
- B) The Flash Loader Program was configured earlier; verify the configuration is the same and click on the “Next” button.
- C) Click the “Boot Loader” button

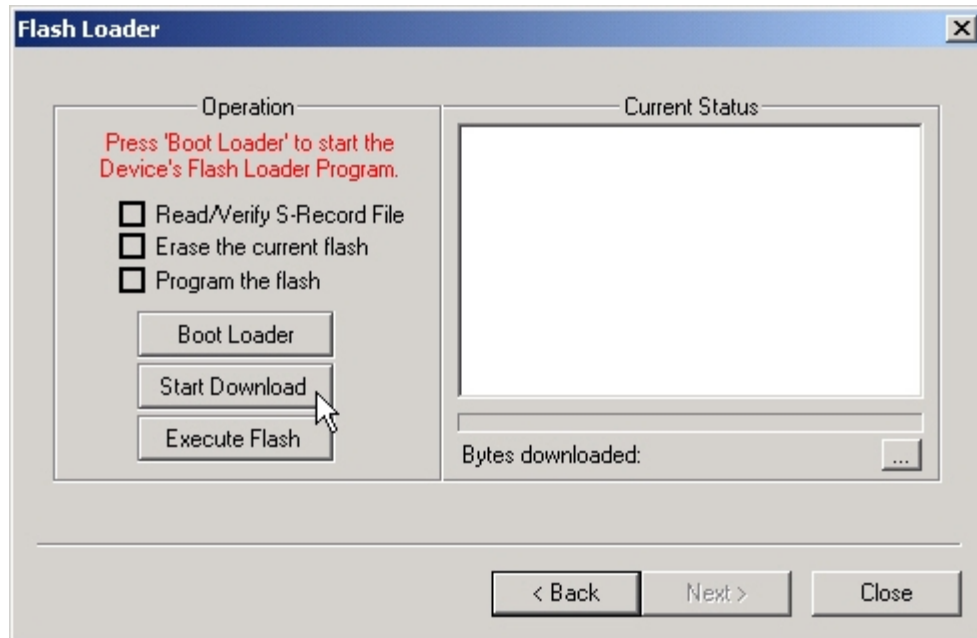


- D) Watch the display of the XFC; it should appear with "Totalflow Flash Loader"

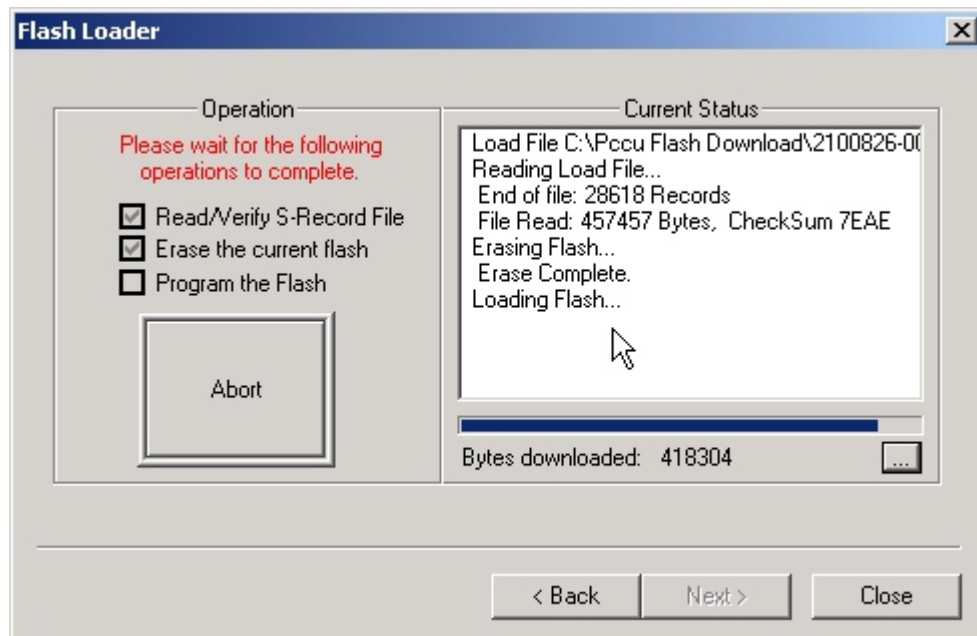
E) The “Flash Loader” screen should appear as below.



F) Click on the “Start Download” button of the “Flash Loader” screen.

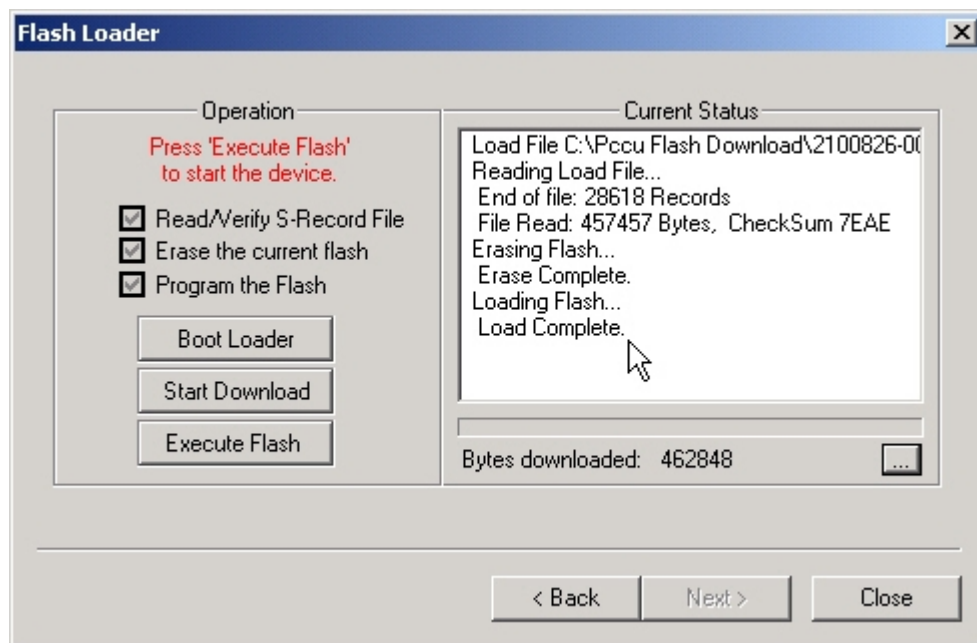


- G) On the XFC display, “Totalflow Flash Loader” will appear on the top line and Erase” on the bottom line. Next, on the display “Flash Loader” will start to increment numbers until it is complete. The “Flash Loader” screen will appear as below during the Flash Download.



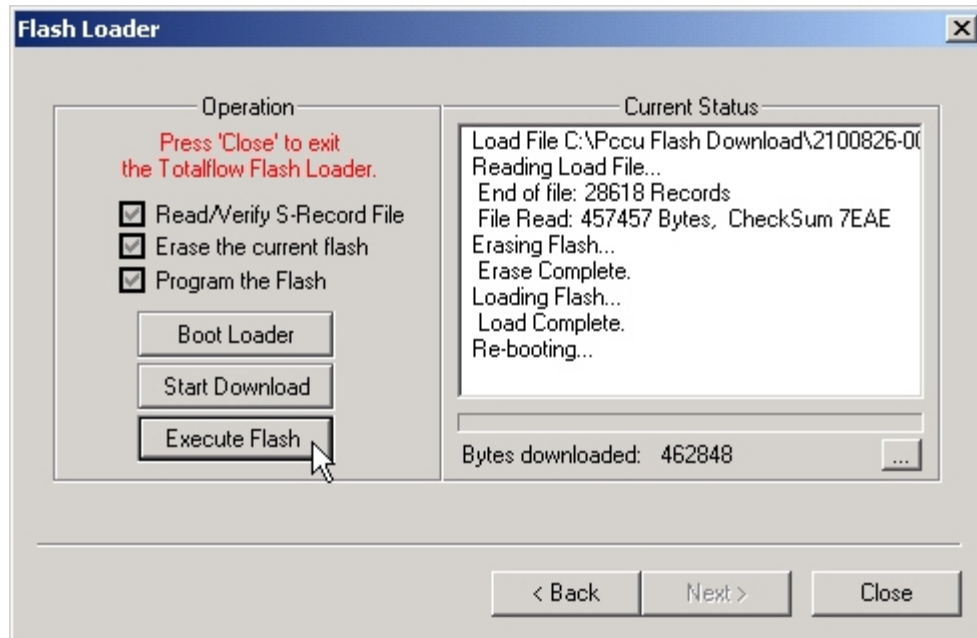


H) When complete, the “Flash Loader” screen will appear as below.



I) The XFC display should appear with “Totalflow Flash Loader on top line  
and “7FE00” on bottom line.

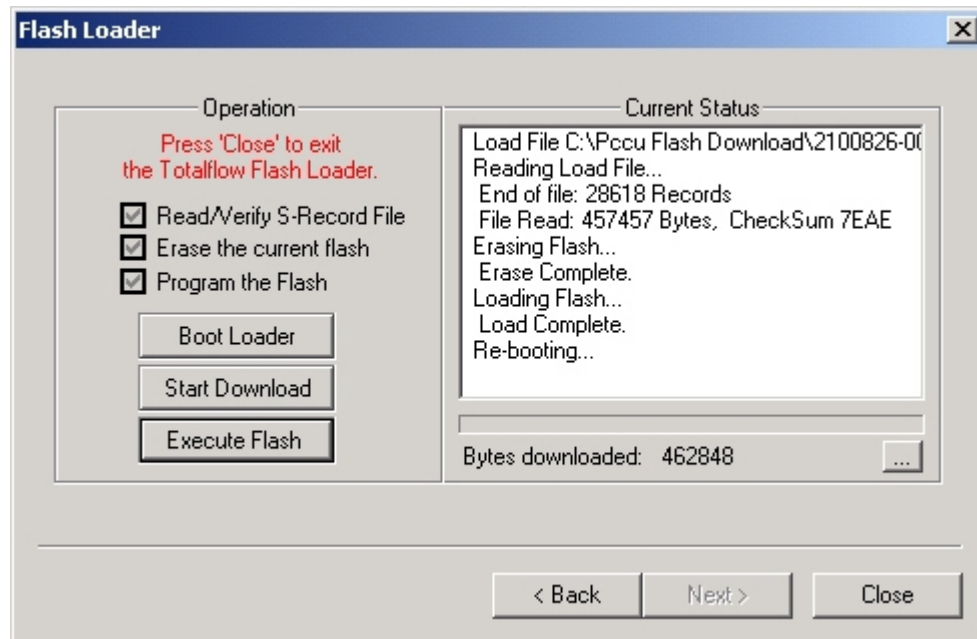
J) Click on the “Execute Flash” button of the “Flash Loader” screen.



K) As the Flash is being executed, the XFC display will appear with the following messages in RAPID succession.

- 1) Verifying Flash on top line and number incrementing on bottom line.
- 2) Checksum 7EAE = 7EAE on top line and Verify Passed on bottom line.
- 3) Warm Boot on top line and "Flash 2100xxx-xxx on bottom line.
- 4) XSeries Flow Computer on the top line and 2100xxx-xxx (COPYRIGHT) on the bottom line. When this appears, the "re-booting is complete.

L) When "Execute Flash" is selected, the Flash Loader Program screen should appear as below.



- M) The word “Re-booting” will appear in the “Flash Download” screen before the XFC is finished re-booting, please wait for the XFC screen to appear as in Step 4 above. When it does, the download is complete in the XFC.
- N) Click on the “Close” button.
- O) The XFC display will appear with XSeries Flow Computer on the top line and 2100xxx-xxx (COPYRIGHT) on the bottom line. The display will not scroll until the set up of the XFC is complete.

## PCCU32 Configuration

Start the PCCU 32 program

Click on “Operate”, then “security” and click on “login”

For “User Name” type in **Admin** ( **just as you see it type here** ), then click on the “Okay” button.

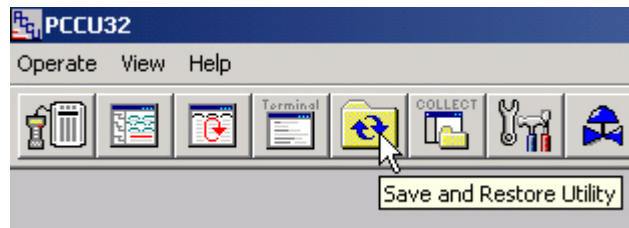
No password is needed

## **8) Station File Download**

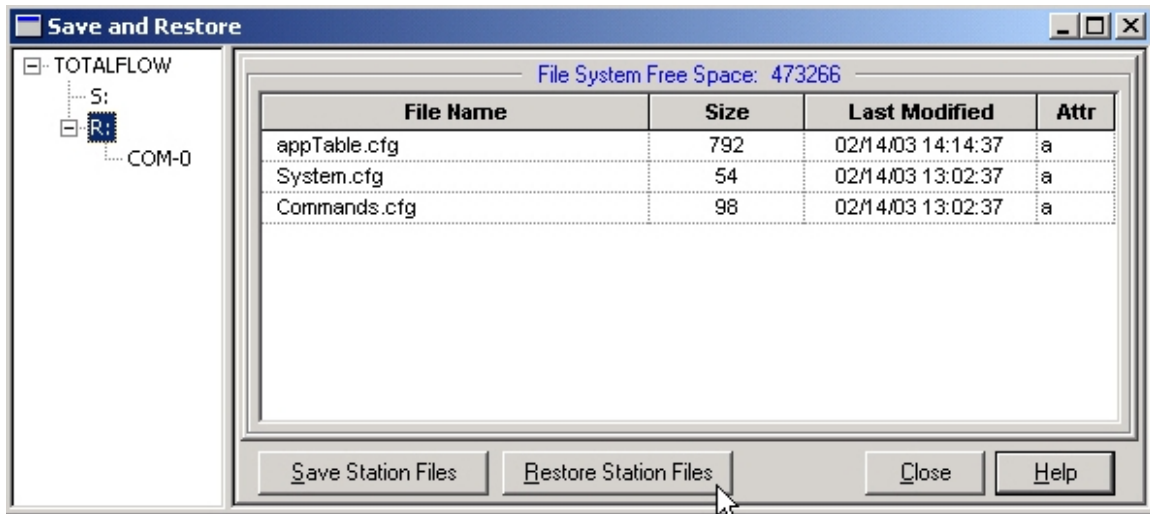
The “Station Files” must be loaded to complete the set up of the XFC.

With the PCCU cable still attached to the XFC, click on the “Connect to Totalflow” Icon.

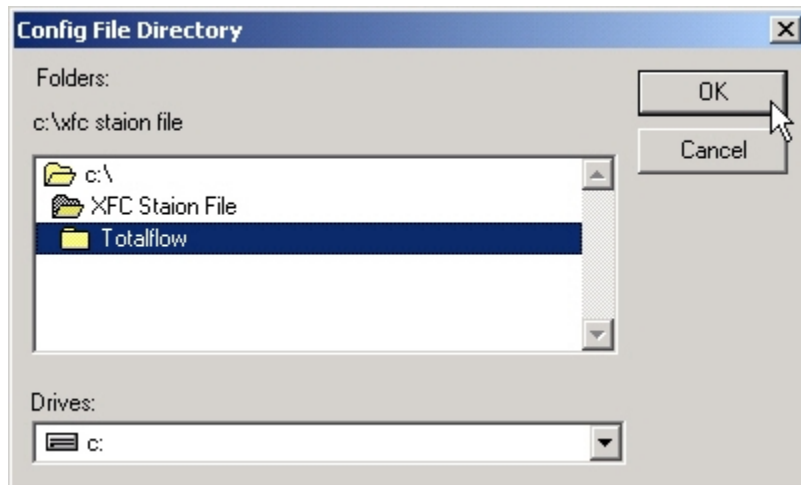
Click on the “Save and Restore Utility” Icon.



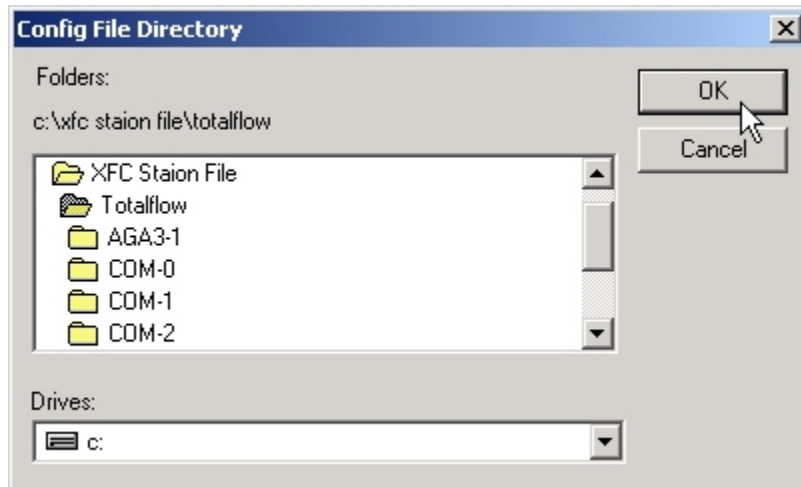
Click on “Restore Station Files” button.



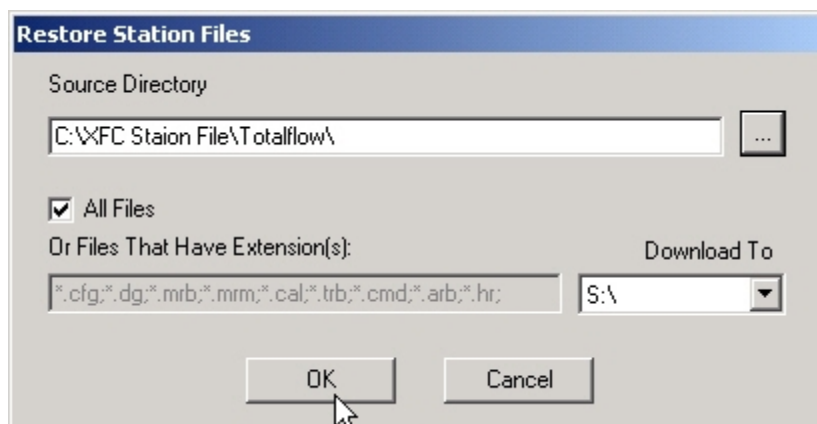
Browse to the “XFC Station File” Folder created earlier on the laptop “C” drive; highlight the “Totalflow Folder” and the click “OK” button.



When the screen below appears, click the “OK” button.



From the “Restore Stations Files” screen, make certain the “Download To” window has **S:** selected, then click the “OK” button.



This will load the default station files to the “S:” drive of the XFC.

When the Station File download is complete; click the “OK” button.



Close the “Save and Restore Utility” screen.

Click on the “Terminal” Icon.

At the terminal prompt, type **boot =COLD** then press enter. This will force the XFC to copy the contents of the “S” drive to the “R” drive.

“COLD BOOT” will appear on the top line of the XFC display and “FLASH 21000xxx-xxx” will appear on the bottom screen. After a few moments the XFC display will begin to scroll.

Close the “Terminal” window and close PCCU32.

Restart PCCU 32 and click on the “Connect to Totalflow” Icon.

The specific parameters can now be entered for this XFC.

Perform calibration checks, calibration, configuration, etc. as required by your company.