

Totalflow product line

Technical bulletin 196

Notification regarding G4 32MB engine card modification and system resets

Totalflow products

File name: **2104821-TB196AA.docx**

Distribution: **External public**

Date: **3/15/2013**

Revision: **AB**

Page: **1/14**

Status of document: **Released**

Doc name: **Technical bulletin 196**

Document Title: **Notification regarding G4 32MB engine card modification and system resets**

Issued by department: **Totalflow customer service**

Language: **En**

Creator name: **USJAEST**

Contact: **+1 918.338.4888 or 800.442.3097 (opt. 2)**

Proprietary information

Power and productivity
for a better world™



1. Introduction

Abnormal flow computer and RTU processor system resets have been detected, verified, and corrected. Processor resets have been reported on some G4 products manufactured from March 2012 through January 2013. A hardware modification to the 32MB processor card, also referred to as "engine card", has been implemented as well as software modifications that correct the system resets. Upgraded 32MB engine cards with pre-loaded software are available for all G4 product lines.

2. Description

In March of 2012, the ABB Totalflow G4 products underwent an engine card upgrade. This small board contains the processor, data and program memory, as well as communications and electrical power management components for the G4 products. The upgrade was necessary to keep pace with memory component availability. At that time, we took the opportunity to double the engine card's memory capacity from 16MB to 32MB.

In the fall of 2012, information gained from Totalflow testing/monitoring and reports from customers indicated that some devices were experiencing system resets. As the ambient temperature decreased, an increase in system resets was occurring. In the past few months, a major effort involving manufacturing, sustainability and R&D has focused specifically on resolving this issue. We have determined that the voltage regulator required by the new 32MB memory component which was introduced in early 2012 has shown susceptibility to lower voltage outputs than may be required by the processor during transitions from warm to cold temperatures. As the ambient temperature decreases, the voltage also decreases to a level where system resets can occur. This is not occurring on all units. However, it is recommended that all 32 MB engine cards with part numbers in the ranges listed in the following section be replaced.

Software code has been thoroughly evaluated and significant number of changes made to increase the stability and reliability of this code.

3. Is your product affected?

The hardware that is affected is the 32MB engine card used on G4 products prior to February 2013.

The following products are affected:

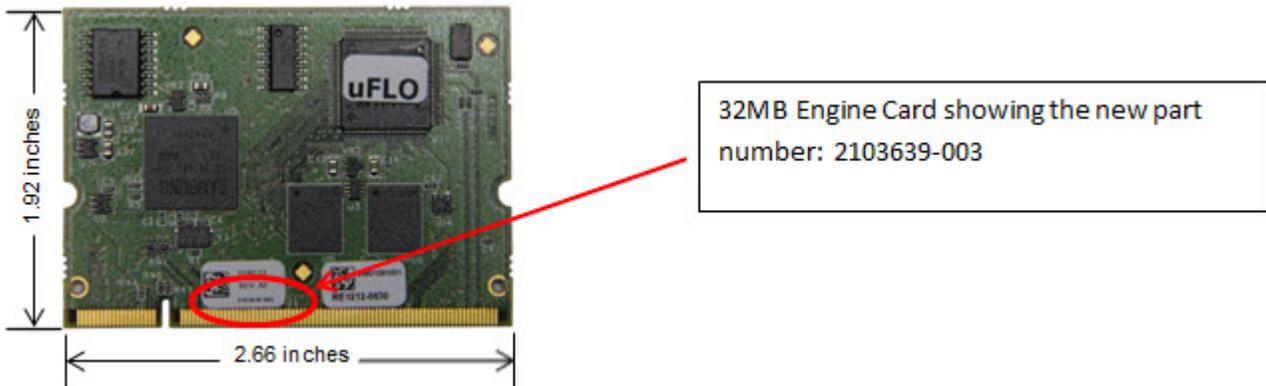
- XFC^{G4} with 32MB engine card part numbers of 2103639-001 and 2103639-002. The OS (Operating System software) part numbers would reflect 2104445-004 or older. US flash part numbers would reflect 2102861-047 or older, and Selectable Unit flash part numbers would reflect 2104339-016 or older.
- XRC^{G4} with 32MB engine card part numbers of 2103639-001 and 2103639-002. The OS (Operating System software) part numbers would reflect 2104446-004 or older. US flash part numbers would reflect 2103132-047 or older, and Selectable Unit flash part numbers would reflect 2104340-016 or older.
- μFLO^{G4} (microFLO^{G4}) with 32MB engine card part numbers of 2103639-001 and 2103639-002. The OS (Operating System software) part numbers would reflect 2104464-005 or older. US flash part numbers would reflect 2104497-011 or older, and Selectable Unit flash part numbers would reflect 2104498-011 or older.

- XFC^{G4}6200/6201EX with 32MB engine card part numbers of 2103639-001 and 2103639-002. The OS (Operating System software) part numbers would reflect 2104447-004 or older. US flash part numbers would reflect 2104159-025 or older, and Selectable Unit flash part numbers would reflect 2104158-025 or older.

Note: Users of μ FLO^{G4} (microFLO^{G4}) and XFC^{G4}6200/6201EX with 32MB engine card part numbers of 2103639-001 and 2103639-002 should refer to [Technical Bulletin 197](#) for additional information specific to those platforms regarding engine card and RTD input upgrades.

4. Resolution

The voltage regulator was replaced on the 32MB engine card. The modified engine card has been thoroughly tested over temperature and does not exhibit the voltage drop at reduced operating temperatures that the previously used regulator exhibited. This voltage drop was the root cause of the 32MB engine card system resets that were randomly observed and has been resolved with the modified engine card. The new engine card may be identified by part number 2103639-003 or greater on the card itself. Each card will also have a sticker indicating the hardware platform that it is designed for. The new engine card shown below reflects that it is the new part and is for a μ FLO^{G4}.



The software (Operating System and flash) has also been updated and is installed on the appropriate engine cards. Users will be able to identify any units that may have this upgrade installed by referring to the attached sticker and verifying the part number to be 2103639-003 or greater. **Please note that this only affects engine cards with the base part number 2103639. If you have an engine card that is a different base part number, this Technical Bulletin does not apply.**

If the product being upgraded is either a μ FLO^{G4} or EX^{G4}, it is recommended that the RTD input upgrade cable be installed at this time as well. (See Totalflow Technical Bulletin 197 for additional details pertaining to this cable upgrade.) Totalflow recommends that 32MB engine cards with the affected part numbers shown above be replaced with 2103639-003 or newer.

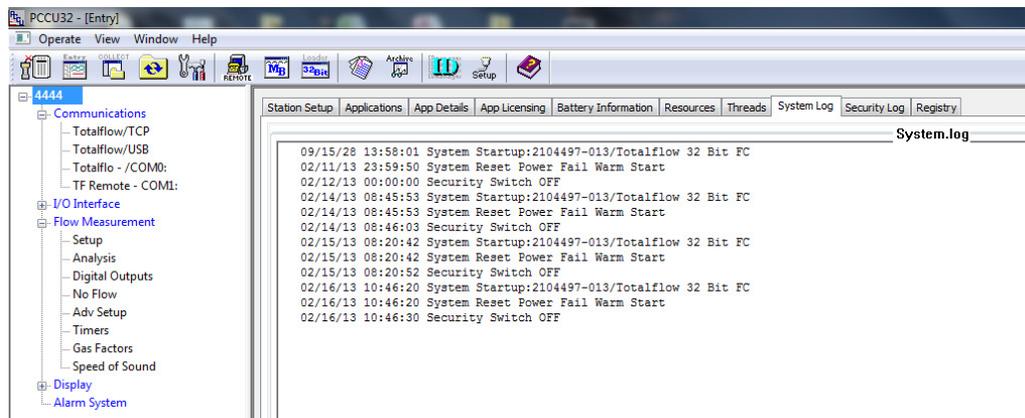
4.1. Upgrade procedure

These steps are not meant to replace your company requirements.

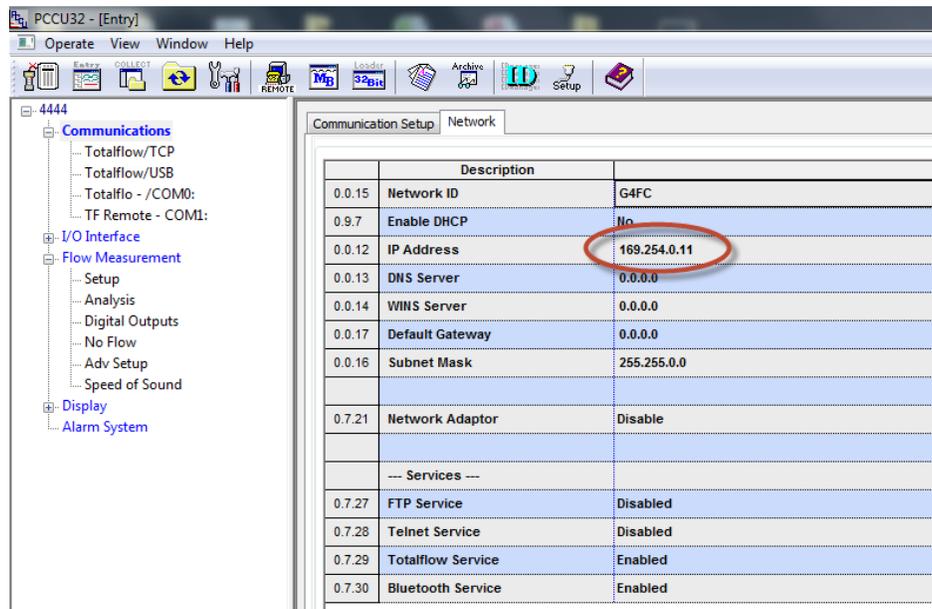
WARNING: The procedural steps in this Technical Bulletin DO NOT address cautionary steps to perform when equipment is installed in Classified Hazardous Locations. Refer to the user manual for the product for precautions prior to performing any of the steps of this procedure.

You have several options for how you update your meter once your new engine card is installed. We will cover 3 of the options in the steps below. In **Option A**, you will manually configure your meter as if it were new. In **Option B**, you will save the existing configuration and restore it in the new engine card – this will include only station files and calibration files. In **Option C**, you will pull the tfData and tfCold files from the current engine card and put them into the new engine card. This option does restore ALL historical data and events. Most of the steps below can be followed for any option. The steps that are part of one of the options will be labeled as such.

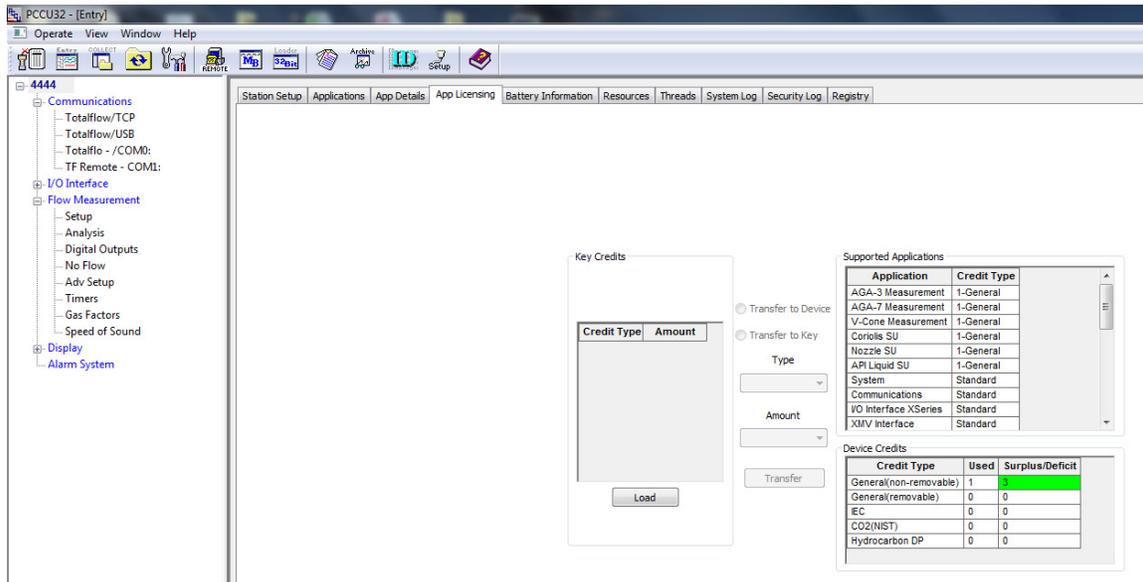
1. As founds (Perform calibration checks)
2. Remote and Local collects as needed, including a laptop file.
3. Check system log and tube events and resolve any issues (i.e. meter asleep, battery issues, etc.)



4. If using Ethernet, record IP address.

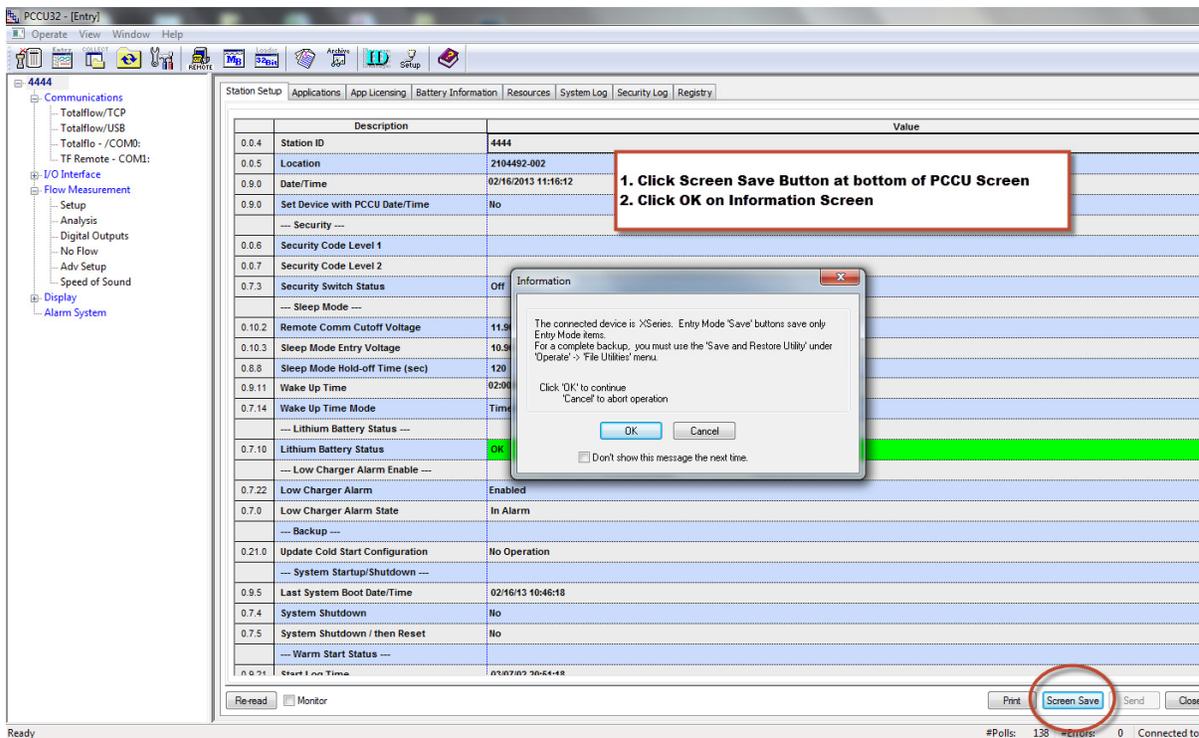


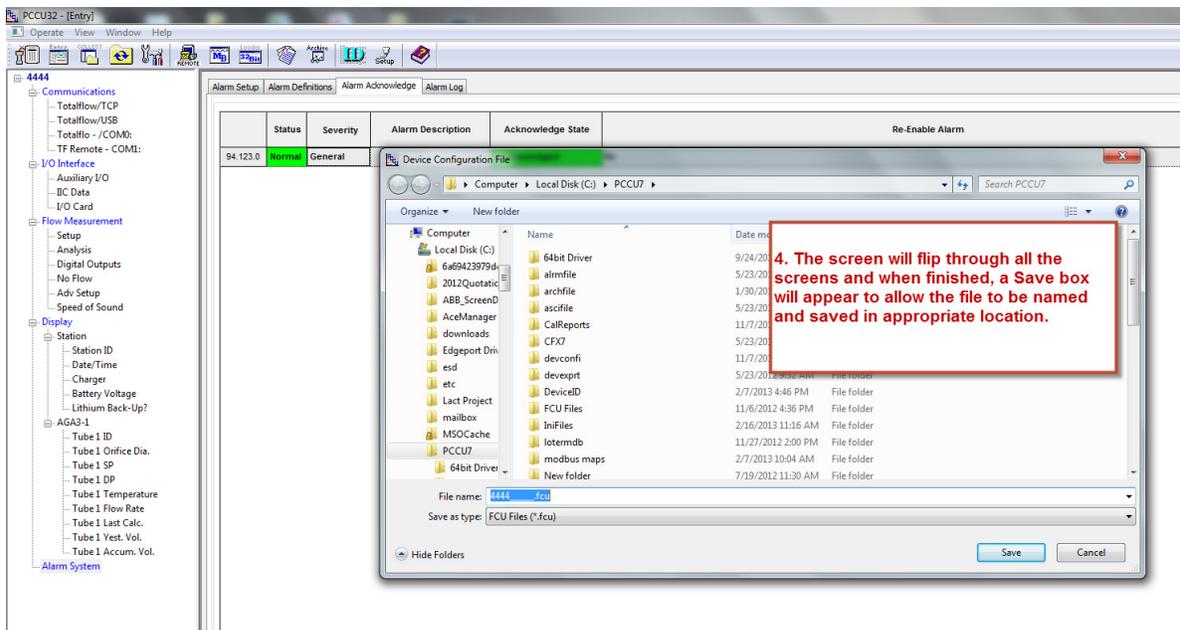
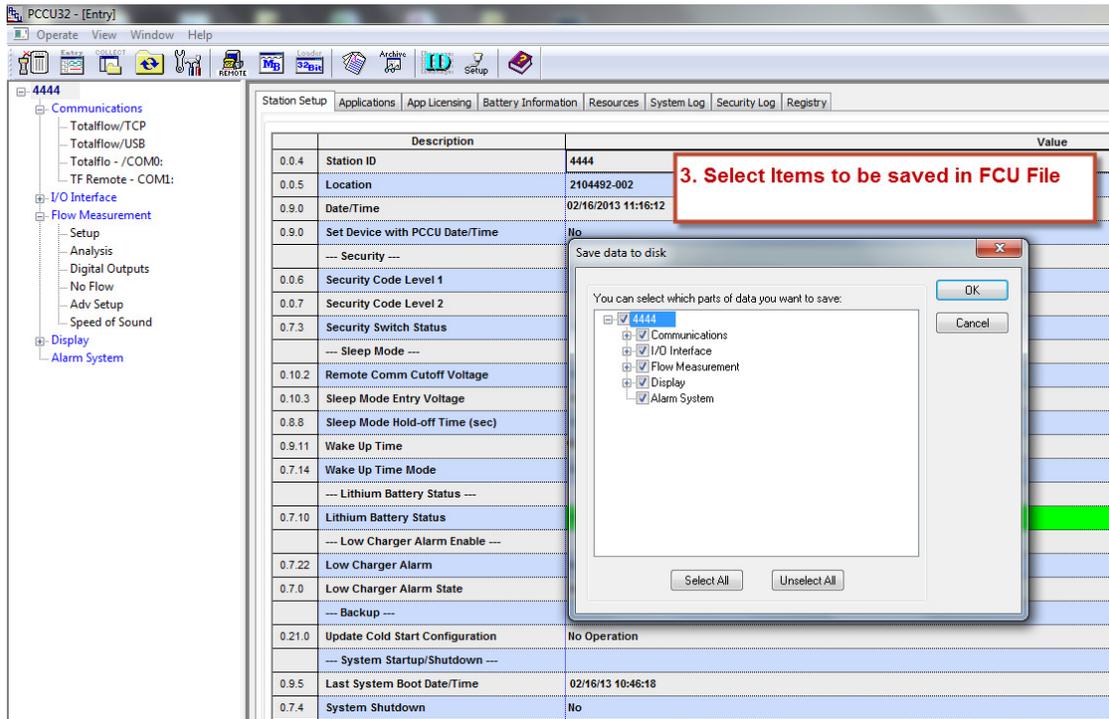
5. Check app credits/licensing. A μ FLO^{G4} comes standard with 2 application credits, and the XFC^{G4}, XRC^{G4}, and EX^{G4} come standard with 4 application credits. If you have more credits than what are noted above, please contact Order Entry (800-442-3097, Option 1) and request a credit key be sent with those extra credits.



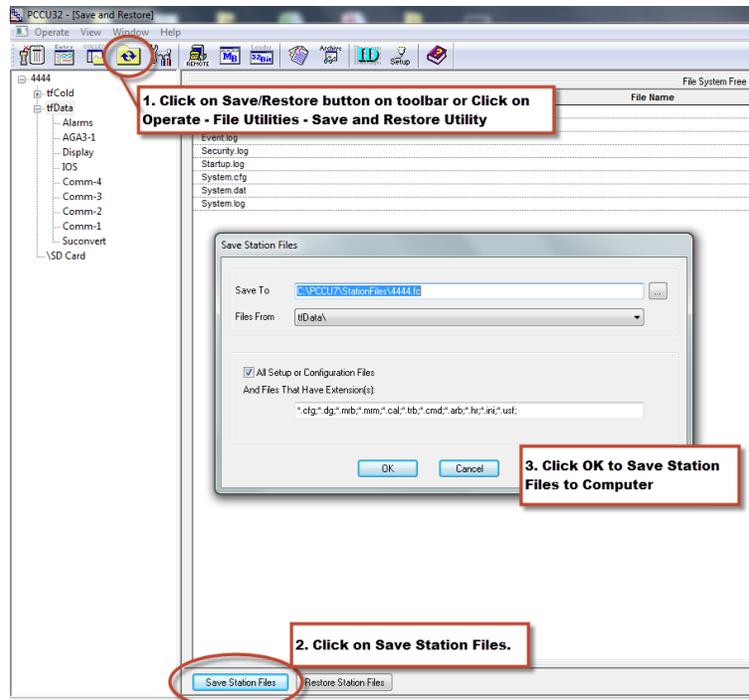
- Before proceeding, you will need to get the information out of the current engine card that will be put back into the new card. Follow the option below that corresponds to the method you will be using. (See page 4 for a description of the 3 options).

Option A – Collect the fcu file (or use another method to document the meter configuration, such as screenshots or manually recording the station set up). For best results, make sure you are in Expert view.



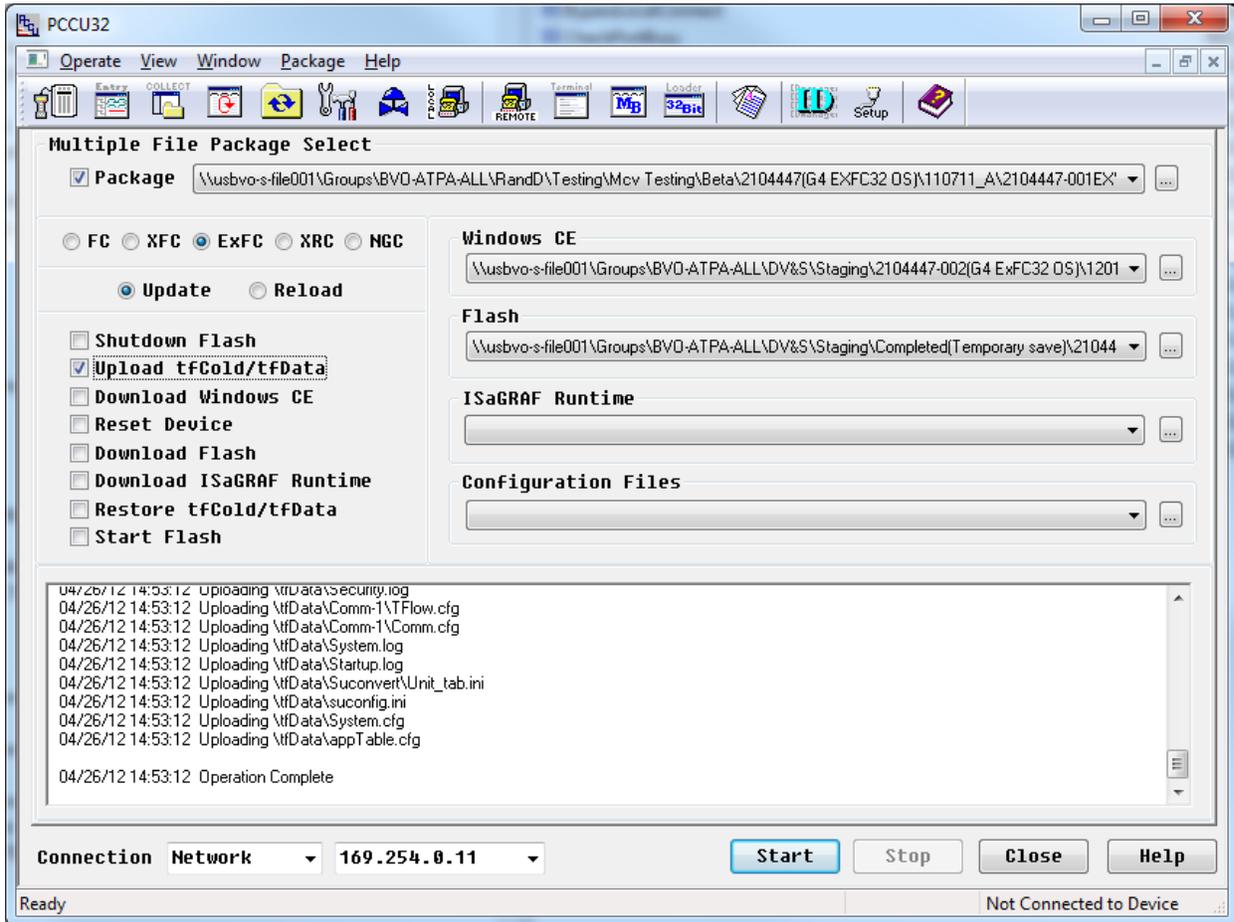


Option B – Save the existing configuration to be restored. Keep in mind this only includes station files and calibration files.

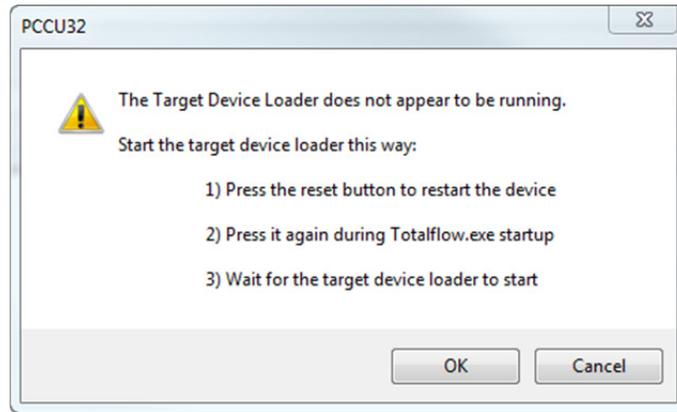


Option C – Upload tfData and tfCold. This will grab all station files, events, log records, log files, and historical data.

- a. Using PCCU's 32 Bit Loader screen, select the appropriate device type, select "Update" mode, check "Upload tfCold/tfData", and click Start.



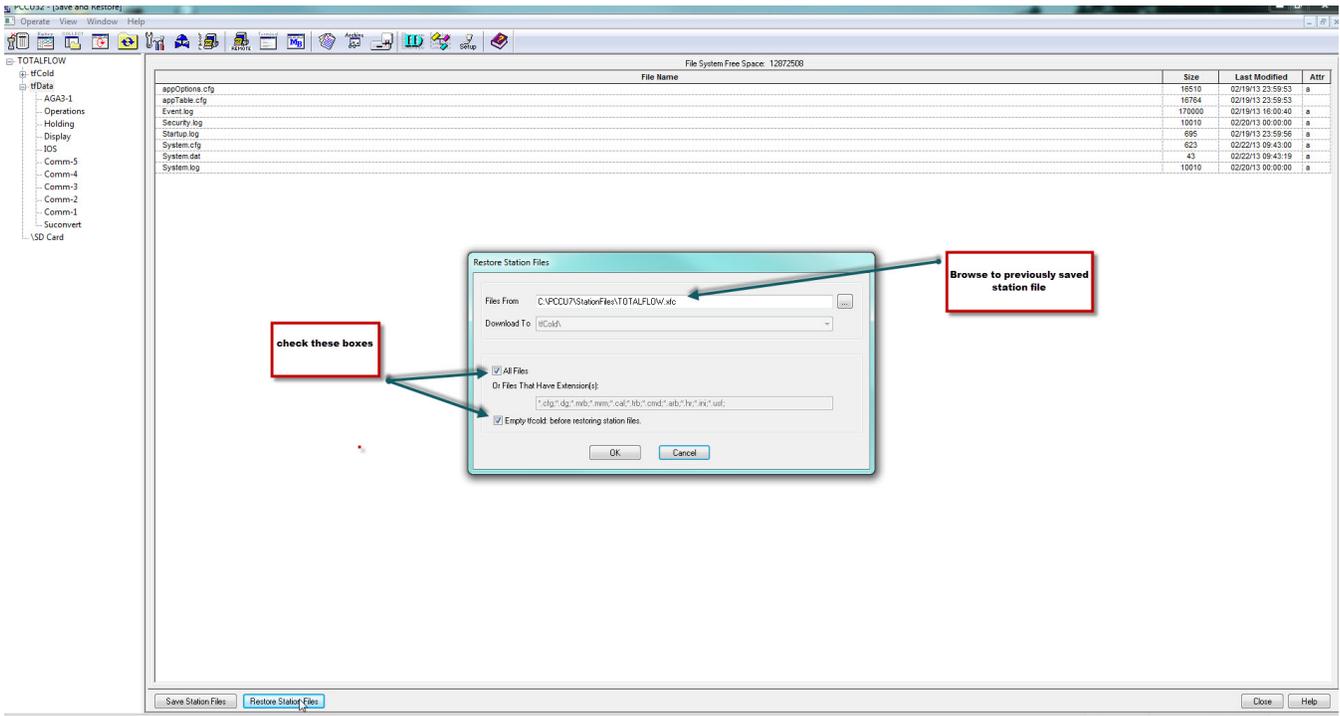
- b. When using Serial/USB, you will be required to put the meter into the “Device Loader” mode. Once you click on the Start button, a box will pop up in the middle of the screen stating that the Target Device Loader does not appear to be running.



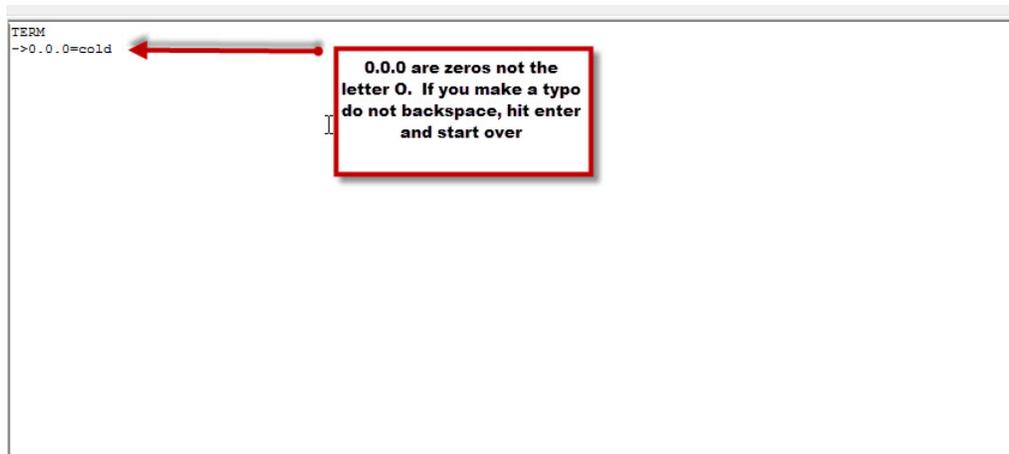
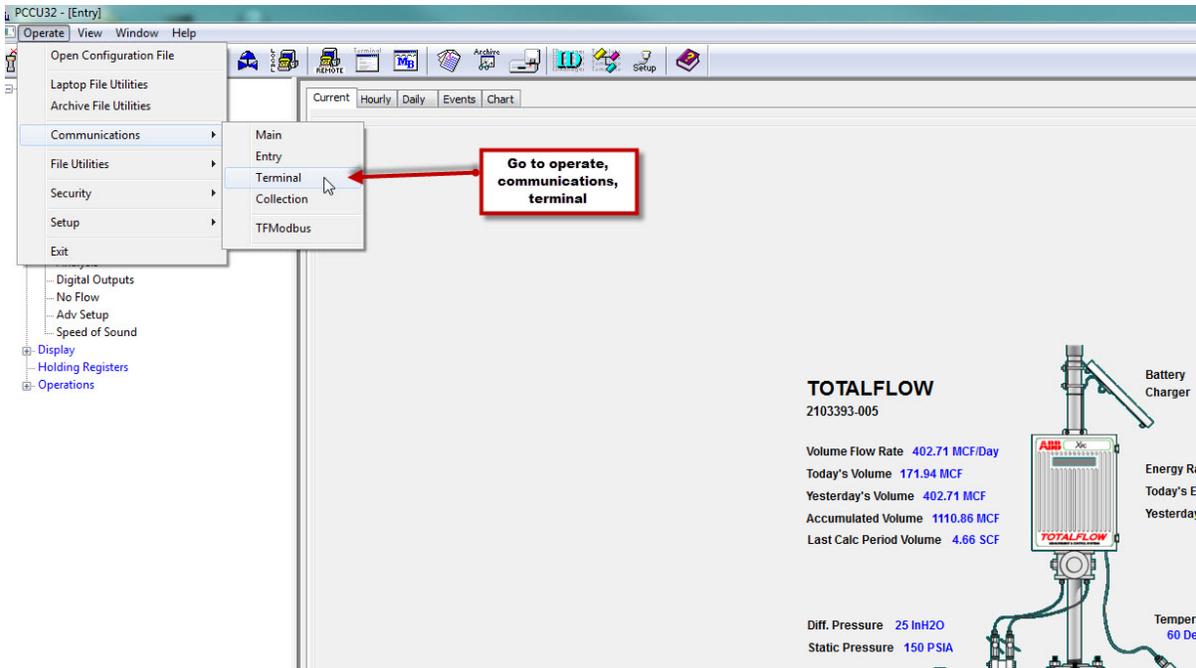
- c. Press the Reset button (left side of the board) in one time – watch the meter’s display until “Totalflow.exe Startup” scrolls, and then push the reset button again.
- d. Watch the display on the meter until “Device Loader” is displayed. Once this happens, click “OK” in the box above (PCCU). The download will begin and the progress will be shown at the bottom of the 32 Bit Loader screen and on the display on the meter. The data uploaded out of the meter will be in the PCCU7 directory under a folder called “Upload”.
7. Power down meter
 8. Unplug all peripheral devices (display, pccu connector, comms, phoenix connectors that are being used, etc.)
 9. Remove lithium battery or disable memory backup jumper
 10. If desired, install the new Smart Cable (μ FLO^{G4} and EX^{G4} only). Refer to Technical Bulletin 197 for instructions.
 11. Remove the engine card.
 12. Insert new engine card.
 13. Reconnect all peripheral devices (display, PCCU connector, comms. phoenix connectors, etc. that are being used, etc.)
 14. Power device up **and wait for device to go thru boot sequence and start scrolling.**
 15. Reconnect lithium battery or enable memory backup jumper

16. At this point, you will reconfigure your meter using the option selected previously.

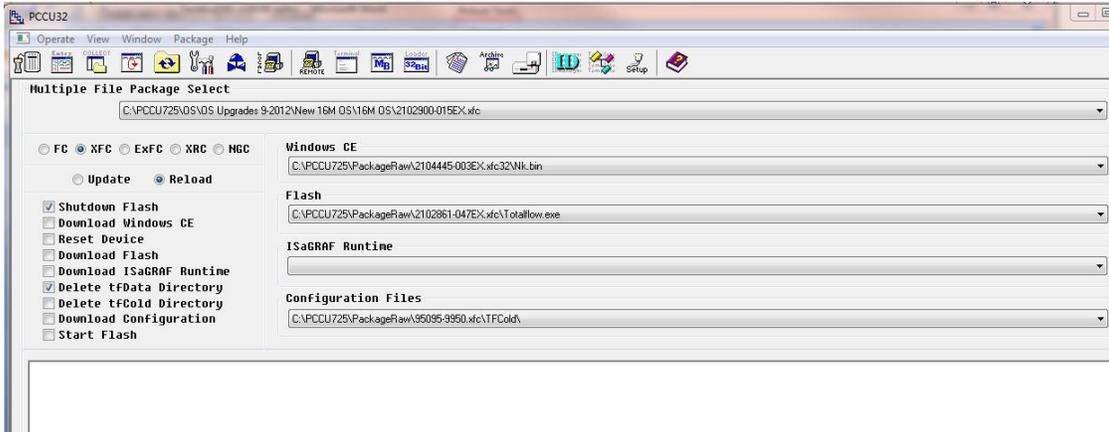
- a. **Option A** – Open the fcu file or other documentation that contains the meter information and configure your meter manually.



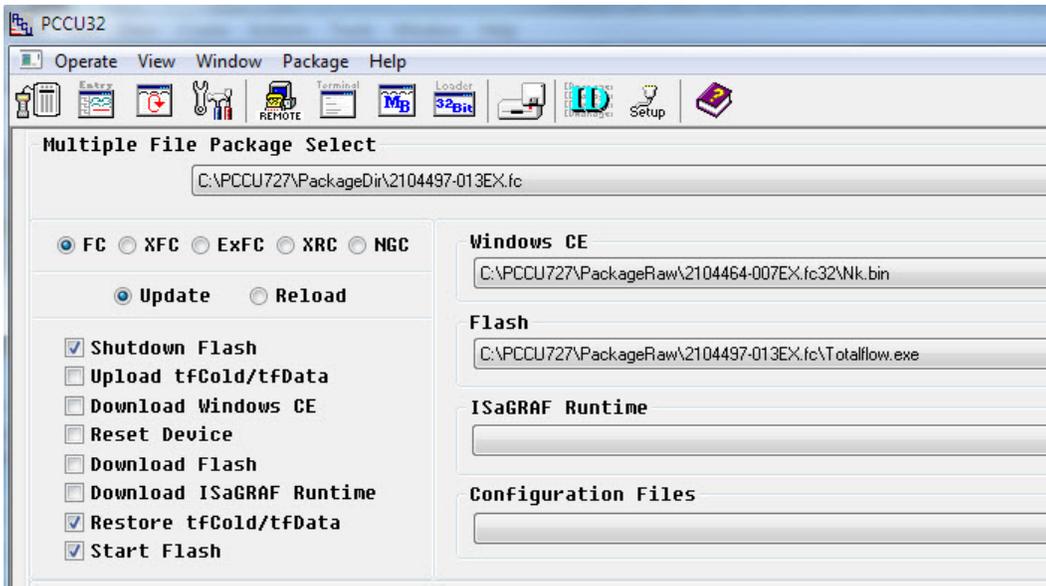
b. **Option B** – Restore station files.



- c. **Option C** – Restore all files.
 - i. Delete tfData Directory



- ii. Restore tfCold



17. Replace IP if needed (see step D above)
18. Check App/License credits (see step E above)
19. Verify that the battery shows a voltage other than 0. If the battery voltage shows to be zero, power the meter down and reseal the engine card. Power it back up and re-verify battery voltage.
20. Verify functionality (DP, Static, Temp reading values)
21. Recalibrate meter per your company procedure

22. As lefts

23. Verify Calibrations on external devices (AI's, AO's, etc.)

5. Additional Information

Please notify Order Entry at 800-442-3097, option 1, to make scheduling arrangements for exchange of affected engine cards. Please provide the number of cards needed and the product they will be installed in (XFC^{G4}, XRC^{G4}, μFLO^{G4} or EX^{G4}). This is important so that the correct engine cards can be shipped. For μFLO^{G4} or EX^{G4} products, please indicate if the RTD input upgrade cable is also needed.

Totalflow product customer service

7051 Industrial Blvd.

Bartlesville, OK 74006

Phone: +01 918 338 4888 (option 3)

Toll Free: +01 800 442 3097 (US only)

www.abb.us/totalflow