CFGBackup Users Guide

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Purpose

CFGBackup is a utility that allows the user to backup and restore the CMM controller EEProm data from various Sheffield brand CMM's.

Under normal conditions the EEProm data in the controller is stable and does not change unless specifically written but due to age or other factors the EEProm data can change randomly particularly following a cycle of the controller power. The controller performs a CRC error check on the EEProms at power-up and if this fails (meaning the contents of the EEProms does not match the previous known values) then the controller is put into a permanent error state until fixed. The CFGBackup utility allows the user to create a backup file containing a copy of all the controller's EEProm data and restore it on a future date in order to clear any CRC error that may happen.

User Interface

The user interface of *CFGBackup* is shown in illustration 1.

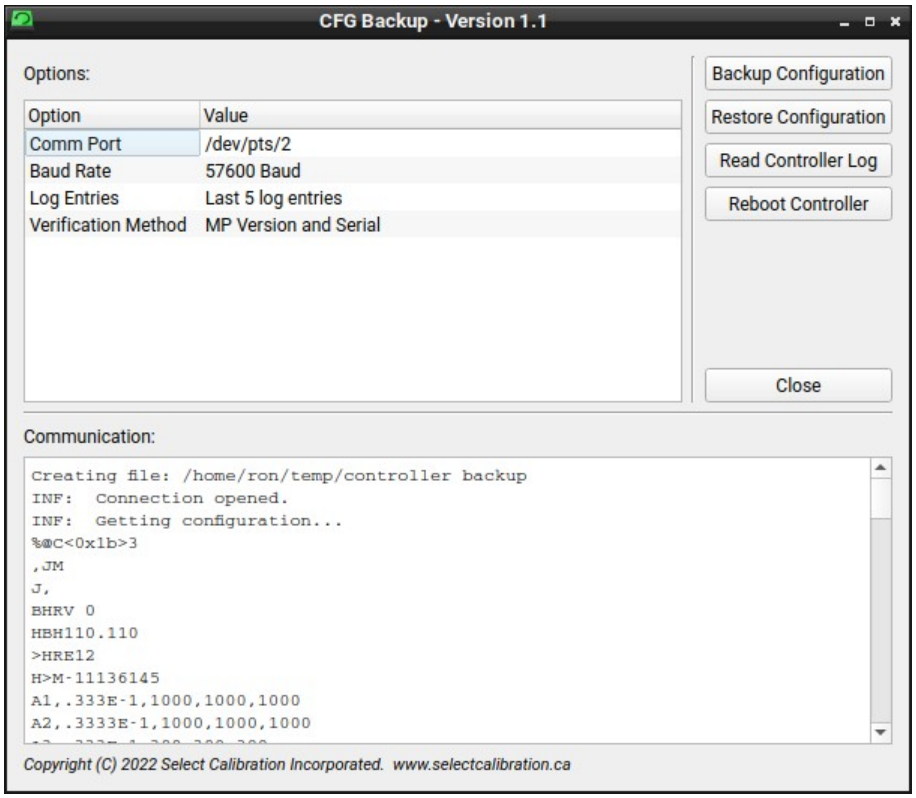

Illustration 1: CFGBackup User Interface.

Controller Backup Procedure

To create a controller backup configuration file it is necessary to know which comm port the controller is connected to and the baud rate. The baud rate is usually associated with the type of controller but this is not always true. The following table lists the different controller types and

typical baud rates used by Sheffield:

Controller Type	*Typical Baud Rate*
MP35	9600
MP350	19200
MP400	57600
UMP350	19200
UMP360	19200
UMP370	19200

For controller types not listed check the settings of the inspection software used on the CMM to determine the proper baud rate.

Sequence:

1) Edit the value of the *Comm Port* option to match the comm port used by the controller. When running this utility on Windows the typical *Comm Port* for the controller would be COM1.
2) Select the controller Baud Rate from the list of available options.
3) Click the button *Backup Configuration* to begin the process of creating a backup CFG file.

Comments:

- The name of the configuration file is set by the user when the backup process is started. The name of the backup file is also shown at the top of the communication log.
- The format of the backup file is comparable to formats used by Sheffield. The file is a text file and can be opened with any suitable text editor.
- The first line of the backup file shows the controller firmware version in the format XXX.YYY where XXX is the version and YYY is the type.
- The line with entry E12 contains the controller serial number.
- This backup file does not include the single F EEProm entry at the end of the file that is common with Sheffield utilities that perform the same function. There is no F EEProm in the controller and this entry is used an an integrity check by Sheffield software.

Controller Restore Procedure

To restore the controller configuration it is necessary to know which comm port the controller is connected to and the baud rate. It should be the same as the settings used when the backup was created unless there were changes to the computer hardware.

Sequence:

1) Edit the value of the *Comm Port* option to match the comm port used by the controller. When running this utility on Windows the typical *Comm Port* for the controller would be COM1.

2) Select the controller Baud Rate from the list of available options.
3) Click the button *Restore Configuration* to begin the process of restoring the controller EEProm data from a previously created backup configuration file.
4) Select the previously created backup configuration file. If the file is valid it will be written to the controller.

Do not mix up configuration files from different machines. The result may be a non-functional CMM.

Comments:

- The name of the existing configuration file is set by the user when the restore process is started. The name of the file is shown at the top of the communication log.
- The default option is to verify the MP Version and controller serial number match the values from the configuration file. Since the EEProm data is suspect these entries may not match. These checks can be disabled if necessary using the Verification Method option.

Options

The following is a list of function and options from the CFGBackup utility:

Option	*Description*
Backup Configuration	Create a backup configuration file from the Sheffield controller.
Restore Configuration	Restore the Sheffield controller configuration from a previously created backup file.
Read Controller Log	Show the contents of the controller log.
Reboot Controller	Perform a soft reboot of the controller.
Comm Port	Name of the serial communication port used for the Sheffield controller.
Baud Rate	Baud rate for the serial port.
Log Entries	Option for the number of log entries to display. By default the last five are shown but the entire history can be displayed if required.
Verification Method	Verification method used when restoring the configuration file. See Verification Method section below.

Verification Method

When restoring the configuration of a Sheffield controller from a backup file two separate tests are performed to make sure the selected configuration file belongs to the controller. The two checks are enabled by default but can be disabled if needed. The two verification checks are:

1) MP Version
2) Controller Serial Number

The MP version check is done by comparing the controller version data at the beginning of the backup configuration file to the actual controller version. The controller version is retrieved by the command *BHRV 0*. If the two sets of data do not match it could mean that the firmware was recently updated but it could also mean there was some internal problem in the controller (corrupt

EEProms ?). If this verification check is disabled then an additional HEE_ERASE command is sent in the assumption that a firmware update was performed.

The controller serial number check is done by comparing the data from the backup file E12 line with that of the controller. Since the EEProm data may be altered these fields may not match.

The option to override the verification checks should not be used unless needed and separately confirmed. Do not mix up configuration files from different machines as the result may be a non-functional CMM.

Revision History		
Date	*Version*	*Changes*
Nov 4, 2022	1.0	New program.
Nov 16, 2022	1.1	Added verification check option.