

Application note  
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# Servo drive application backup & restore with GemDriveStudio

## 1 – INTRODUCTION

The **GemDriveStudio** PC software tool has been developed for the parameterization and commissioning of series **XtrapulsPac** servo drives. **GemDriveStudio** is a multi-axis software that allows the parameterization of all drives in a same application via one single connection (serial link RS232). This application note describes the following basic operations for a given application: drive configuration backup and drive configuration restore. For more information about the software installation and the functionalities description, please refer to the **GemDriveStudio** quick start manual.

## 2 – OFF-LINE PROJECT BUILDING

A project consists in a representation of the application with all drives connected to the CAN bus. The creation of the project off-line allows to enter the desired user name for each drive (Spindle, X rotation, Y advance, ...) according to the application.

For creating the project off-line according to a given application, proceed as described below:

- Select first "New project" in the "File" menu, and follow the project creation instructions.
- Select "Add a device" in the "Project" menu, and follow the device creation instructions.
- Select "Remove a device" in the "Project" menu, in order to remove a drive from the project.
- When all servo drives of the application have been defined, select "Save project" in the "File" menu.

## 3 – APPLICATION BACKUP (concerns all drives of the project)

If the application project has been previously created and saved, proceed as described below:

- Select "Open project" in the "File" menu, and then select the application project.
- Select "Connect to the fieldbus" in the "Connection" menu, for establishing the communication with the servo drives.
- Select "Drive files backup" in the "Tools" menu, and then "Backup from the drives". All drive configuration files (parameters, sequences, programs, ...) are saved in the drives and transferred into the project directory on the PC. A backup directory named "SDcard" is also created in the project directory. **So, after this operation, the drive parameters and the project parameters on the PC are identical.**
- Select "Archive the project" in the "File" menu. Archiving a project groups all files of the project directory as well as the project structure in a ZIP file. It is convenient for transferring a project on another PC.

If the application project is not available, proceed as described below:

- Select "Scan the fieldbus to detect devices" in the "Connection" menu and follow the instructions. The "Scan" function allows the automatic creation of a project with all drives connected to the bus.
- Select "Drive files backup" in the "Tools" menu, and then "Backup from the drives". All drive configuration files (parameters, sequences, programs, ...) are saved in the drives and transferred into the project directory on the PC. A backup directory named "SDcard" is also created in the project directory. **So, after this operation, the drive parameters and the project parameters on the PC are identical.**
- Select "Save project" in the "File" menu and follow the project saving instructions.
- Select "Archive the project" in the "File" menu. Archiving a project groups all files of the project directory as well as the project structure in a ZIP file. It is convenient for transferring a project on another PC.

For saving different drive configurations of a same application, proceed as described below:

- Select first "Save project as" in the "File" menu and follow the project saving instructions.
- Modify the application parameters and settings.
- Then select the "Drive files backup" operation.

Remark: The backup directory named "SDcard" created during the backup operation contains all files for an SDcard in order to restore drives which have an SDcard connector. Select "Drive files backup" in the "Tools" menu, and then "Copy backup files to movable support" for this operation. However, the "SDcard" directory does not include the full project information. **So, for a project to be transferred on another PC, it must be archived in a ZIP file.**

Note: In order to access the current project directory, select "Open the directory" in the "Project" menu.

#### 4 – APPLICATION RESTORE (concerns all drives of the project)

If the application project has been previously archived in a ZIP file, proceed as described below:

- Select "Unarchive the project" in the "File" menu, then select the archive ZIP file according to the application and the output directory. The project is then unarchived and can be opened. The name of the project directory will be the same than the ZIP file.
- Select "Connect to the fieldbus" in the "Connection" menu, for establishing the communication with the servo drives.
- Select "Drive files restore" in the "Tools" menu, and then "Restore all the application".
- Select the backup directory named "SDcard" in the project directory. All drive configuration files (parameters, sequences, programs, ...) saved in the backup directory are transferred in the application servo drives and in the current project directory on the PC. **So, after this action, the drive parameters and the project parameters on the PC are identical.**

Remark 1: For restoring various drive configurations of a same application, open the corresponding project, then execute the "Drive files restore" command, and select the backup directory named "SDcard" in the project directory.

Remark 2: For restoring only one drive of a given application, select "Drive files restore" in the "Tools" menu, and then "Restore only 1 device". Then, follow the restore command instructions.

If the application project archive (ZIP file) is not available, but only the "SDcard" backup directory, proceed as described below:

- Select "Scan the fieldbus to detect devices" in the "Connection" menu and follow the instructions. The "Scan" function allows the automatic creation of a project with all the drives connected to the bus.
- Select "Save project" in the "File" menu and follow the project saving instructions.
- Select "Drive files restore" in the "Tools" menu, and then "Restore all the application".
- Select the backup directory named "SDcard" in the project directory. All drive configuration files (parameters, sequences, programs, ...) saved in the backup directory are transferred into the application servo drives and into the current project directory on the PC. **So, after this operation, the drive parameters and the project parameters on the PC are identical.**

Note: In order to access the current project directory, select "Open the directory" in the "Project" menu.

### 5 – DRIVE PARAMETERS BACKUP (concerns one project drive)

Connect first the concerned drive in the project treeview, and then proceed as described below:

- Select "Parameter setting" and "Drive parameters file" in the treeview.
- Execute "Backup parameters to PC file" in the "Drive parameters file" window. The drive parameters are saved in the DRIVEPAR.TXT file in the drive; this file is then transferred in the project directory on the PC and placed in the appropriate sub directory with the device name. **So, after this operation, the drive parameter values and the DRIVEPAR.TXT file parameter values in the project directory on the PC are identical.**

### 6 – DRIVE PARAMETERS RESTORE (concerns one project drive)

Connect first the concerned drive in the project treeview, proceed then as described below:

- Select "Parameter setting" and "Drive parameters file" in the treeview.
- Execute "Restore parameters" in the "Drive parameters file" window.
- Select the required backup file (DRIVEPAR.TXT type) on the PC directory. The selected backup file is first copied into the current project directory on the PC (in the appropriate sub directory with the device name) and renamed DRIVEPAR.TXT if its name was different. It is then transferred into the servo drive, and the current drive parameter values are overwritten. **So, after this operation, the drive parameter values and the DRIVEPAR.TXT file parameter values in the project directory on the PC are identical.**

### 7 – FILE SERVICE TOOL

Select "File service" in the "Tools" menu. The concerned drive can be selected in the "Axis" list.

The command "Write a file into the drive" allows to send a drive configuration file (parameters, sequences,..) from the PC to the drive. Only the drive specific files with a reserved name can be sent (DRIVEPAR.TXT, USER\_PAR.TXT, SEQUENCE.TXT, ...). After the file transfer, the drive current parameter values are not overwritten. The new file parameter values will be considered only at the next drive power up.

The command "Write an object file into the drive" allows to send the parameter values in the selected file into the drive. Any drive parameter file, regardless from its name, can be sent. However, the parameter syntax in

the file must be observed. After the file parameter transfer, the drive parameter values are overwritten. However, these parameter values are not saved in the drive.

The "File service" is reserved to skilled people, because an incorrect use may involve a wrong operation of the drive. In this case, do not make any backup operation in order to avoid the PC files being corrupted as well. Proceed as described below in order to restore the correct drive configuration:

- Delete all drive files by using the "Delete" command".
- Switch off and on again the drive logic supply (24 V). At power up, the drive default parameter values (from the firmware) will be considered.
- Restore the correct drive configuration by using the "Drive files restore" function or the "Parameter file restore" function. If a safe backup had not been made before, the commissioning procedure must be renewed.

## 8 – OFF-LINE PARAMETER DISPLAY AND OPERATIONS

If the application project has been previously created and saved, proceed as described below:

- Select "Open project" in the "File" menu, and then select the application project.
- Right-click on the node of the project tree and select "Simulate". Renew the operation for all the desired application servo drives.

If the application project has been previously archived in a ZIP file, proceed as described below:

- Select "Unarchive the project" in the "File" menu, then select the archive ZIP file according to the application and the output directory. The project is then unarchived and can be opened.
- Right-click on the node of the project tree and select "Simulate". Renew the operation for all the desired application servo drives.

The drive simulation allows the following operations:

- display of the parameter file saved in the project drive directory,
- display, modification and saving of the sequence files saved in the project drive directory,
- display, modification, compilation and saving of the programming source files saved in the project drive directory.

A backup operation can be achieved off-line as described below:

- Select "Drive files backup" in the "Tools" menu, and then "Backup from the project directory". All the project directory configuration files (parameters, sequences, programs, ...) are saved in a backup directory named "SDcard" in the project directory.
- The backup directory named "SDcard" created during this backup operation contains all files for an SDcard in order to restore drives which have an SDcard connector. Select "Drive files backup" in the "Tools" menu, and then "Copy backup files to movable support" for this operation.

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