

Application Note

AN-VTC-28

Upgrading the Drive software using a PDA

Author: Peter Evans, Invertek Drives Ltd

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This application note is now a combination of previous application notes AN-VTC-28 (Upgrading the User Interface Software) and AN-VTC-29 (Upgrading the Motor Control Software)

· General:

To maximise flexibility and future compatibility, the Optidrive VTC has been designed to be upgradeable using its Infrared communication link and a Pocket PC installed with the Optiwand CE Plus application software.

To be able to upgrade the drive firmware, Optiwand CE Plus must be running on the Pocket PC and official Optidrive firmware upgrade software files must be present in the internal memory of the Pocket PC. The upgrade files can be obtained from your distributor directly. Distributors can obtain these files from the Invertek Drive Ltd VIP website.

· Procedure:

The whole upgrade process is outlined in Figure 1. Please follow every stage of the process to guarantee a successful upgrade

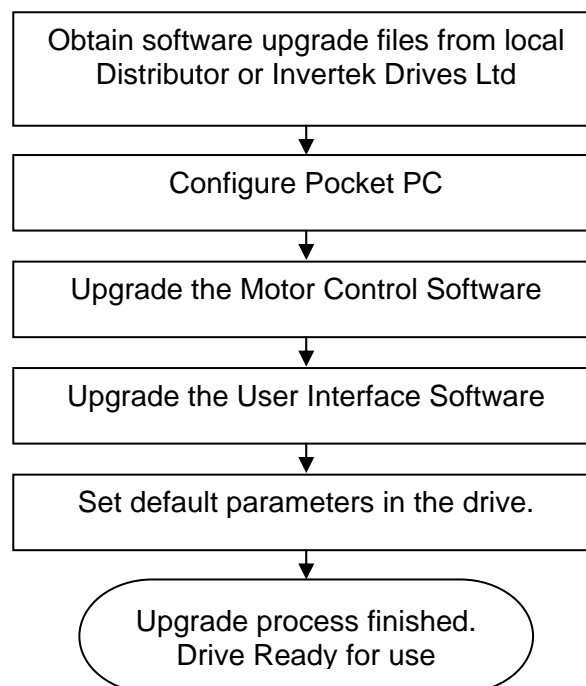


Figure 1

Configuring the Pocket PC

Please follow the instructions that came with the Pocket PC to establish an Activesync connection to you computer.

Always make sure the latest Optiwand CE Plus software is installed on the Pocket PC. This can be downloaded for free from the Invertek Website www.invertek.co.uk

There are 2 files required to upgrade the Drive Firmware, the Motor Control Software and the User Interface (I/O) Software. These files need to be copied to the Pocket PC prior to starting the upgrade process. Please refer to your Pocket PC documentation on how to copy the files to your Pocket PC. The upgrade files can be obtained from your distributor directly. Distributors can obtain these files from the Invertek VIP website.

Launch Optiwand CE Plus on the Pocket PC.

To start the upgrade process, Tick the **Enable Firmware Updates** option in the **Config** menu as shown in Figure 2.

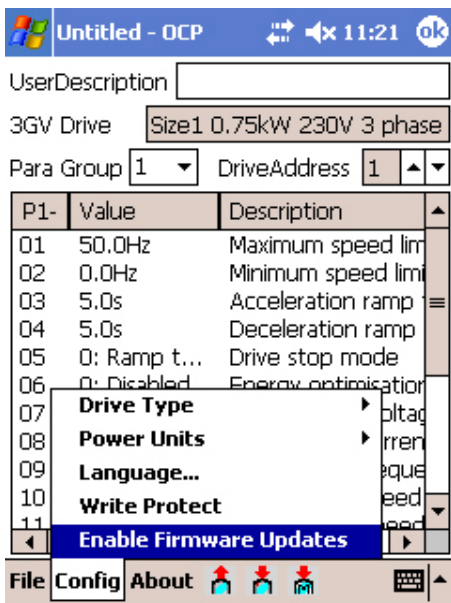


Figure 2

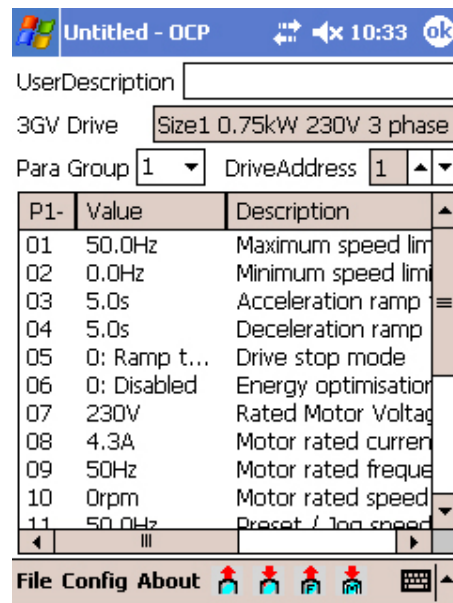



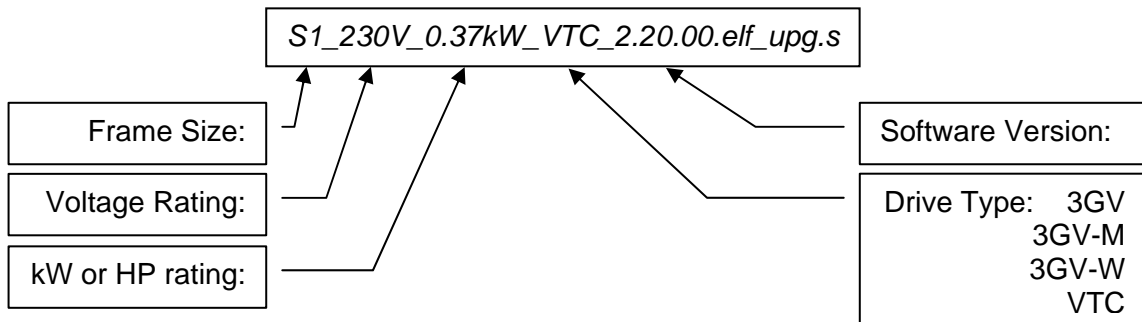
Figure 3

A new Upgrade Firmware icon () will now appear at the bottom of the screen, as shown in Figure 3. This icon initiates the upgrade process on the Pocket PC.

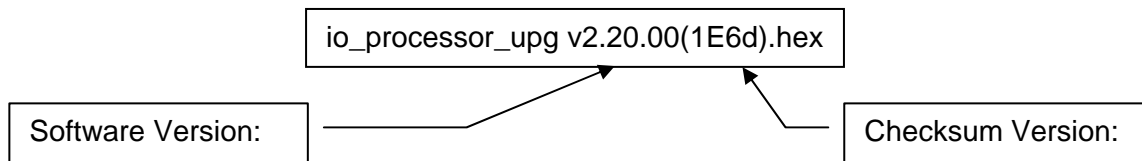
Firmware upgrades filename structure

Upgrading the drive firmware always requires 2 files, Motor Control Software and the User Interface (I/O) Software. The upgrade software filename structure is defined below.

Motor Control Software filename format.



User Interface (IO) Software filename format.



Upgrading the Motor Control Software


For safety reasons we recommend that you remove the all control connections from the drive, by removing the 11-way connector.

All drive parameter settings will be lost during the upgrade process, please backup your settings before proceeding.

Upgrade process.

1. In order to upgrade the motor control processor software, the user must set up the Optidrive upgrade parameter correctly. This requires access to a special parameter group (group 6). This is accessed by setting P1-14 = 702.
2. The upgrade function is enabled by setting P6-01 = 2,
3. Now power down the drive completely, and then power back up again.

It may take several minutes for the drive to fully discharge, do not power up immediately after display goes blank.

4. When the drive is powered up again, the symbol "Prog.." will appear on the drive display. This means that motor control software upgrade function is enabled. If drive shows 'Stop', it means the drive has not been fully discharged during the power cycle. The user then has to repeat the above step to re-enable the upgrade function.
5. Before starting the data transfer, make sure that the IR port of your Pocket PC is in the correct position – pointing at the IR window of the Optidrive to ensure a better condition for the IR data transfer.
6. Click on the Upgrade Firmware icon ().
7. Select the appropriate file for upgrade depending and drive type and rating as defined previously. For this example *S1_230V_0.75kW_3GV_2.20.00.elf_upg.s* as shown in Figure 4.
8. A progress indicator in the Pocket PC application window provides an indication as to how much of the file has been transferred as shown in Figure 5. Usually data transfer will be complete within approximately 20s.

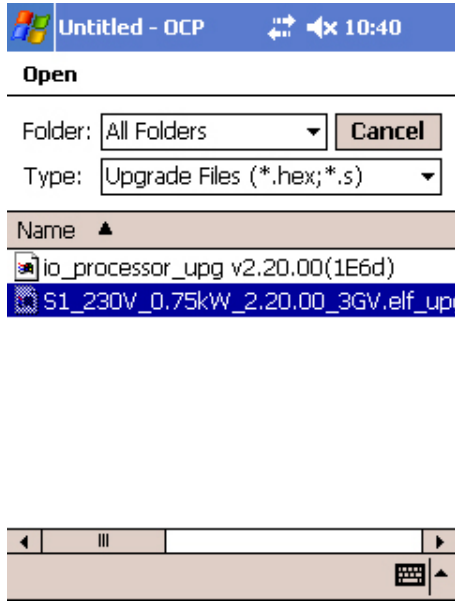


Figure 4

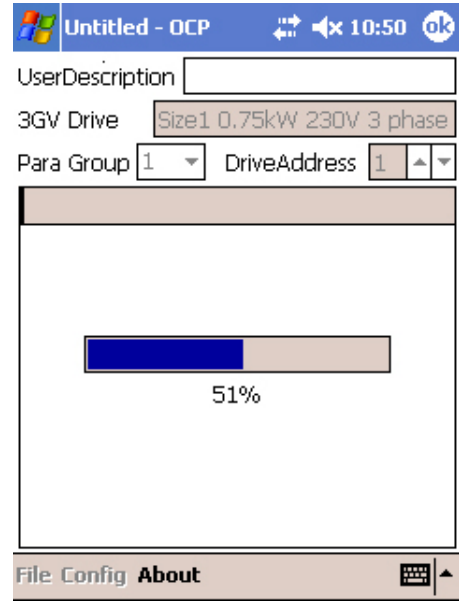


Figure 5

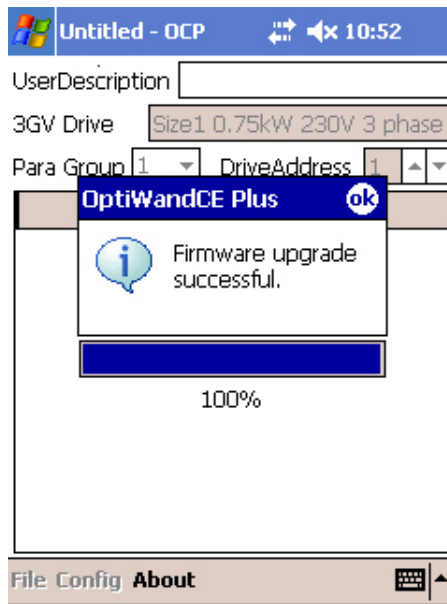


Figure 6


9. When data transfer is completed, the drive will verify the integrity of the software and then upgrade itself automatically and a message will be displayed in the Pocket PC application window as shown in Figure 6. The drive display will change to “dAtA-F”, indicating that the parameter values have been set to default values. Press “StoP” to reset this message.

The drive is now ready to upgrade the user interface (IO) software.

Upgrading the User Interface (IO) Software

For safety reasons we recommend that you remove the all control connections from the drive, by removing the 11-way connector.

Upgrade process.

1. In order to upgrade the motor control processor software, the user must set up the Optidrive upgrade parameter correctly. This requires access to a special parameter group (group 6). This is accessed by setting P1-14 = 702.
2. The upgrade function is enabled by setting P6-01 = 1. The drive display will change to “-----“, indicating that the drive is ready for upgrade.
3. Before starting the data transfer, make sure that the IR port of your Pocket PC is in the correct position – pointing at the IR window of the Optidrive to ensure a better condition for the IR data transfer.
4. Click on the Upgrade Firmware icon ().
5. Select the appropriate file for upgrade depending and drive type and rating as defined previously. For this example *io_processor_upg v2.20.00(1E6d).hex* as shown in Figure 7.
6. A progress indicator in the Pocket PC application window provides an indication as to how much of the file has been transferred as shown in Figure 5. Usually data transfer will be complete within approximately 15s.

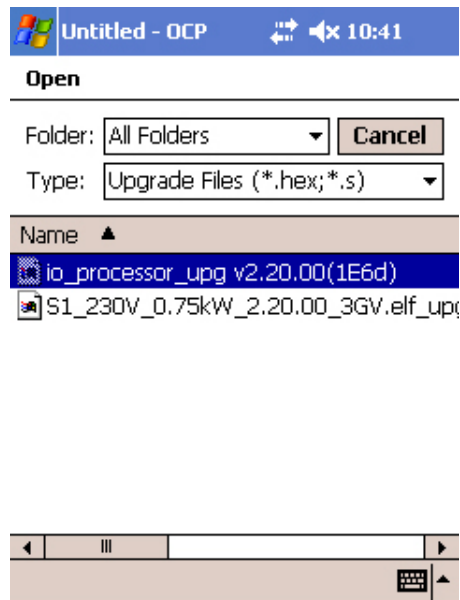


Figure 7

10. When data transfer is completed, the drive will verify the integrity of the software and then upgrade itself automatically and a message will be displayed in the Pocket PC application window as shown in Figure 6. The drive display will change to “StoP”.

11. Set the factory default parameters, by pressing UP, DOWN and STOP for >2s. The display shows "P-dEF". Press the STOP button to acknowledge and reset the drive.

The upgrade process is now complete and the drive is ready to use.

"Comms lost..." Message

If the data transfer procedure is interrupted for some reason, the Optiwand CE will try to re-send the last data frame several times in order to continue the upgrade operation. During this period, a message of "Comms lost..." will appear instead of the progress indicator as shown in Figure 8 , if the data communication link between Pocket PC and the drive cannot be re-established. After approx 10s, a "Firmware upgrade failed" message will be displayed in the Pocket PC application window as shown in Figure 9 .

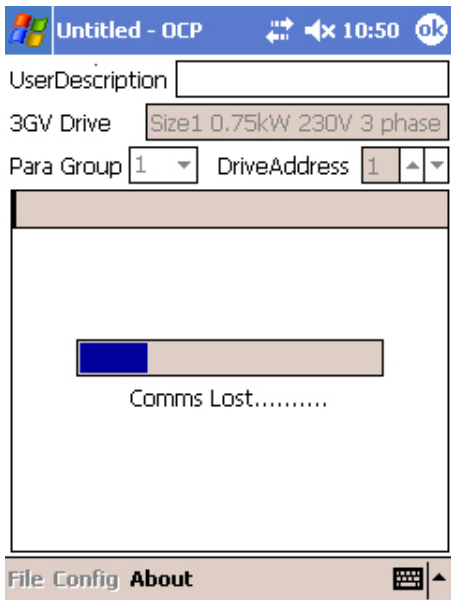


Figure 8

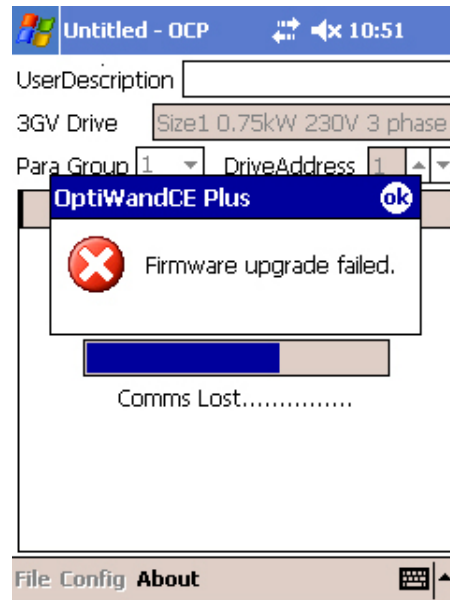


Figure 9

Loss of communications is usually caused by poor signal strength (out of range or poor direction).

If the firmware upgrade fails with "Comms loss" time out, then try to transfer the whole file again. If the problem persists, then please contact Invertek Drives Ltd for technical help.

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