

VarioUltra – Recovery Tool V. 1.42 US (Date: 2017.09.15)

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(WARNING! Information in this chapter is only valid for Distributors and beta testers.)

1. General Information about VarioUltra Recovery Tool

VarioUltra Recovery tool is a Windows application allowing for partitioning and reformatting of VisioBraille VarioUltra 20 and VisioBraille VarioUltra 40 internal memory. It also copies the files required to operate the device to VarioUltra. Using this tool, there is no more need to remove the internal memory components.

The main purpose of this tool is restoring a non-functional device by installing all software components and defaulting to factory settings. Personal data and settings will not be preserved.

The Recovery Tool is configured in a way that it already contains all components required for the recovery process. It does not change, add or remove any system components of the PC it is running from. It also does not change Windows registry keys on the users PC. The recovery process runs fully automated without user interaction required.

2. System requirements of VarioUltra Recovery Tool

VarioUltra Recovery Tool runs on the following operating systems:

- Windows 7 (32/64-Bit)
- Windows 8.x (32/64-Bit)
- Windows 10 (32/64-Bit)

And it requires Microsoft .NET Framework 3.5. (Note: On Startup, the Recovery Tool checks for Microsoft .NET Framework 3.5. If it is not found, the tool will present a dialog box allowing to download and install Microsoft .NET Framework 3.5.)

The tool will not work, unless Bootloader version ≥ 2.12 is installed on VarioUltra. This bootloader was first introduced in version 1.3.1.

The battery should be charged completely.

Also, the VarioUltra USB cable is required.

3. Functionality of VarioUltra Recovery Tool

If you run the recovery tool, it will first unpack all files required for the recovery process to the standard temp folder of your PC.

Then it will run the recovery program itself which opens a window with title bar, a "Start" and an "Exit" button plus a listbox. It is - of course – compatible with screen readers like COBRA, JAWS, Window Eyes, NVDA and thus can be used by a blind operator. All user relevant information will be presented in the above mentioned listbox so the user can follow all relevant steps.

After the tool has been started and the user has pressed the „start“ button, it expects to find a VarioUltra which is in recovery mode connected to USB. As soon as this happens, the tool will take action and perform the following steps automatically without user interaction. This is why we like to call the tool "One Click Fixer".

- Find a VarioUltra which is in Recovery Mode.
- Upload Recovery OS via USB to RAM of VarioUltra.
- Mount VarioUltra internal memory as USB mass storage device.
- Check USB mass storage device for errors and fix if required.
- Create a backups of VarioUltra folders „Flashdisk“, „VarioUltra“, „Temp“ and of file „NK.bin“ in folder „\Documents\ VisioBrailleRecoveryTool\VarioUltra\YYYY_MM_DD_HH_MM“ of current user logged in.
- Create and format FAT partitions required on internal memory.
- Copy Bootloader and Factory OS to their 2 hidden partitions and copy folder „VarioUltra“ (including all sub folders and files of VarioUltra software version which is part of the recovery tool) plus „NK.bin“ to FAT-Partition.
- Finish recovery process and ask user to remove USB cable to automatically restart VarioUltra.

4. How to restore a VarioUltra using the Recovery Tool

Warning: The recovery process restores all components required to operate a VarioUltra. All personal data and settings will be overwritten. After performing a recovery the device is on factory defaults and behaves like a brand new device which has never been used before.

In order to restore your VarioUltra with software version „1.42 English“ please download the following file (please note, the file name may be wrapped and broken in two lines):

save the file „VarioUltra_V01_42_US_RecoveryTool.exe “ (30MB) in a folder of your own choice on your Windows PC and perform the following steps:

- A) Login as local admin or as user with local admin privileges to your Windows PC. Open the folder where you saved the file „VarioUltra_V01_42_US_RecoveryTool.exe “.
- B) Select the file „VarioUltra_V01_42_US_RecoveryTool.exe “ and press ENTER or double click file to run this application.
- C) If Microsoft .NET Framework 3.5 is not installed on your PC, the recovery tool will prompt you to download and install Microsoft .NET Framework 3.5. Press the button „Download and Install“. After automatic download and installation of .NET Framework 3.5, please start again „VarioUltra_V01_42_US_RecoveryTool.exe “ and continue with step D.
If Microsoft .NET Framework 3.5 was already installed on you PC, you will not be prompted to download and will proceed directly with step D.
- D) The Recovery-Application comes into foreground and the Listbox with „Press „Start“ button to begin the recovery process“ will be in focus. Press <Tab> to reach the button „Start“ and click on it, which gives focus to the „Exit“ button (which you do not press).
- E) Make sure VarioUltra is switched off completely (S4 + Power button), connect the VarioUltra which is still switched off to PC using the USB cable.
- F) On Varioultra press „D1+D4+Power button“ to start device in recovery mode and hold down those buttons until the braille dots of VarioUltra make a vibrating sound. Once you hear or feel the vibration, release the buttons. The recovery tool will recognize a VarioUltra in recovery mode and start the recovery process immediately. No further user action is required.

Warning: The recovery tool has to mount the internal memory as USB mass storage device. On some Windows PCs, if a USB mass storage device is installed for the first time, Windows will present a message in background, telling that the PC has to be re-booted in order to make the storage device work. If this is the case on your PC, you will notice that the recovery tool stops for a long time at the point where the mass storage device should be mounted (Message: Waiting to detect the device as Mass Storage) and will not proceed the further steps. In this case, use TAB within the recovery tool to focus the EXIT button, and press this button by hitting ENTER. This will exit the recovery process. Do not disconnect the USB connection to VarioUltra! Instead, press and hold the VarioUltra power switch until the braille display shows the battery charging progress bar. Then restart the recovery tool by executing „VarioUltra_V01_42_US_RecoveryTool.exe “ and press the “Start” button again. Then restart VarioUltra in recovery mode as described under 4F. Now the Recovery Tool will detect VarioUltra as mass storage device and the recovery process will execute as described.

- G) Depending on how much data is stored in VarioUltra's flashdisk and temp folder and the size of internal memory, the backup process and reformatting of the FAT partition may take a significant amount of time. The listbox of the recovery application will show the current action. Simply wait for the recovery being finished. Once finished, the application will tell you to disconnect the USB cable.
- H) The recovery tool will copy the files and folders required to operate VarioUltra into VarioUltra's internal storage. Then it will check their integrity. It will display the number of files copied and also the number of files that should have been copied. If both numbers are identical, then the integrity check was successful.
If the integrity check was unsuccessful, then the failure will be shown, e.g. „File copy failed [filename]“ followed by „Done. x out of y files/dirs have been copied successfully“. and will also display „The recovery process was not successful! Press the button "start" to repeat the process“. If you see this error message, repeat the recovery procedure by pressing the button “Start” while the USB connection between VarioUltra in recovery mode and PC is still active.
- I) If recovery has completed successfully, the listbox will show „Please unplug the USB cable to restart the device“ . After unplugging the cable, VarioUltra will reboot shortly after and will present itself in factory settings like a brand new device without any user settings or data as an English VarioUltra version 1.42.
Please check the installation for the following components by entering the command „v+B7+B8+B9+B0“ :
- Software version: VarioUltra 1.42 US
 - Operating system: 1.1.79
 - Bios: 1.2.0
 - Bootloader: 2.17
- J) If the above versions are shown, the recovery was successful. Press exit on the recovery tool to quit.
5. How to restore personal data on VarioUltra from Backup made by recovery tool
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Normally, the recovery process leaves the device in standard factory settings like a brand new device without any user settings or user data. The user has to change all personal settings and copy all his personal files manually after.

However, as mentioned in chapter 3, the recovery tool tries to backup the device's internal flashdisk, the temp folder and the VarioUltra folder which contains the user folder with all user settings. This is done before overwriting all data.

There are various methods to restore those data on VarioUltra. This only makes sense however, if the restored data is not corrupted and if the data fits the device. For instance, if the user settings of an English version are restored on a French device, it may be bricked again!

- A) Use a USB-Stick, connect it to your PC open the backup folder and copy folders „Flashdisk“, „Temp“ and „VarioUltra\User“ tot he stick. Then use VarioUltras file manager to copy files to your device.
- B) Use VarioUltras MTP-connection to use it as a USB Storage device and copy files in Backup folders Flashdisk, „Temp“ and „VarioUltra\User“ via MTP to VarioUltra internal storage (equivalent to „Flashdisk“ folder) and then use VarioUltra file manager to copy the files to the appropriate locations.
- C) A third way is to use a feature of the recovery tool itself. During recovery, the internal memory is mounted as a mass storage device to your PC by the recovery tool. So, if - and only if – the recovery procedure has finished and the recovery application has not been closed and the USB cable is still connected you have access to the internal memory and can copy the files directly from the PC as follows.
- Open Windows Explorer, select „untitled“ (which ist he mounted USB mass storage device) open this drive. Now you are in the root folder of the FAT partition of VarioUltras internal memory where you see the VarioUltra folder and the file NK.bin. (Note: do not change the file Command.txt, which is required for autoboot after removing USB cable and will be deleted automatically after.)
 - Now open Backup folder which has been created by recovery application during recovery. The exact name of this folder was shown in the list box of the application.
 - Highlight the folder „Flashdisk“ and the „Temp“ folder, copy them with Ctrl + C to Windows-Clipboard, switch to drive „untitled“ and paste with Ctrl-v.
 - Now switch back to Backup-folder, open VarioUltra folder, copy sub folder „User“ to clipboard, switch back to drive „untitled“, open „VarioUltra“ folder, delete „User“ folder and then copy clipboard with Ctrl-V.
 - Close Windows Explorer, switch back to recovery tool and continue at 4I to restart VarioUltra.