



Intellex® 4.1 Ultra

Recovery Procedures



Part Number 8200-0742-01 A0

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Intellex 4.1 Ultra Recovery Procedures

Intellex Ultra Non-RAID Configuration

The procedure for recovery of the Intellex Ultra system information depends on the level of recovery required:

- System flash drive only
- E: drive files
- E: drive Replacement
- System flash plus E: drive replacement

Following instructions performed with Intellex Recovery CD: 0720-0725-xxxx.

System Flash Drive Recovery

To recover the system flash drive, the unit is configured to boot from the recovery DVD and the recover flash option is selected, as described in the following procedure.

Note

Recovering the operating system to the C: flash drive can result in changes to the drive letter assignments. It is important that the drive designated as E: is assigned to the 20 GB partition on the first hard drive. The E: drive also contains the page file pagefile.sys. If the E: drive is not the 20 GB partition or the page file pagefile.sys appears on the C: drive, abnormal operation can occur. Run the file C:\DriveShuffle.cmd to re-order the drives. Then delete the pagefile.sys from the C: drive to restore proper operation.

- 1 Connect a keyboard and press the DEL key while starting the system.
- 2 Enter the BIOS password "xellet".
- 3 Select boot options and change the boot priority to be CD ROM with the rest disabled.
- 4 Place the recovery DVD into the DVD tray.
- 5 Press F10 to save and restart. On the screen you get the message: "Press any key to continue.....".
- 6 Enter "1" to select Recover Flash Disk.
- 7 After the recovery is complete enter "3" to exit.
- 8 Remove the recovery DVD from the tray and press the reset button.
- 9 Press the DEL key while starting the system. Enter the BIOS password "xellet".
- 10 Select boot options and change the boot priority to be Hard Disk, all others disabled.
- 11 Press F10 to save and restart.
- 12 Allow the unit to reboot. The boot splash screen may be displayed for several minutes as the unit reconfigures itself.
 - a Now a program will run Flash Configuration. You will have to wait until it's done and then the Intellex will reboot. When it reboots you get a prompt for the Intellex setup -> Select the language and video format (PAL / NTSC). Read any information dialog(s) displayed during startup.

- 13 Select No to exit Intellex at the license dialog. Right click on the My Computer icon and select Manage.
- 14 Select the device manager and expand the disk drives.
- 15 Right click on the flash disk, select Properties and then the Policy tab.
- 16 Uncheck the Write Cache Enable box.
- 17 Close the Device Manager and My Computer windows.
- 18 Double click on Intellex.
- 19 Enter the License Key (from the front door label).
- 20 Enter the Intellex configuration data either from a saved configuration file or from the Setup screens.

E: Drive Files Recovery

The E: drive files can be re-installed without losing any configuration information or data. This assumes that the E: drive is formatted.

- 1 Connect a keyboard and start the system.
- 2 Exit the Intellex application and insert the recovery disk into the DVD drive.
- 3 Double click on the My Computer icon.
- 4 Double click on the DVD drive.
- 5 Browse to the D:\RAID\EDRIVE folder

Note

Make sure the check box "Overwrite without prompting" is checked in the next three windows, or else Windows will return a message every time it wants to write a file that already exists.

- 6 Double click on the DRIVERS.EXE file to load the drivers.
- 7 Double click on the I386.EXE file to load the system files.
- 8 Double click on the VOLINFO.EXE file to load the volume info file.
- 9 Remove the recovery disk from the DVD drive.
- 10 Close the Windows Explorer window and select Start, Shutdown.
- 11 Press the power switch to restart the system.

E: Drive Replacement

The physical drive that includes the E: drive also has a data partition that contains video data. If the physical drive must be replaced the data on this data partition will be lost. This procedure should be used only if:

- a The physical drive must be replaced, or,
- b The data is so corrupted that the entire disk must be re-partitioned and formatted.

Make sure that any USB drives are disconnected before starting.

- 1 Shut down the system and remove any data drives. Use care in handling the drives.
- 2 Insert the new E: drive into the top position in the drive bay.
- 3 Connect a keyboard and press the DEL key while starting the system.
- 4 Enter the BIOS password "xellet".

- 5 Select boot options and change the boot priority to be CD ROM with the rest disabled.
- 6 Place the recovery DVD into the DVD tray.
- 7 Press F10 to save and restart.
- 8 Enter "2" to select Recover E: Drive.
- 9 After the recovery is complete enter "3" to exit.
- 10 Remove the recovery DVD from the tray and press the reset button.
- 11 Press the DEL key while starting the system. Enter the BIOS password "xellet".
- 12 Select boot options and change the boot priority to be Hard Disk, all others disabled.
- 13 Press F10 to save and restart.
- 14 Allow the unit to reboot. The boot splash screen may be displayed for several minutes as the unit reconfigures itself.
- 15 Press and hold the Ctrl or Shift key while the system starts to prevent Intellex from starting. If Intellex starts, select Utility, Exit to exit to the desktop.
- 16 Double click on the My computer icon. Double click on the C: drive and browse to the C:\Windows\ folder.
- 17 Run the drive sorting program by double clicking on Drives.exe. Click OK to run.
- 18 When the drive sorting program completes it will reboot the system. Intellex will start automatically. Do not add the new drive to the database.
- 19 Shut down the system and re-install the data drives (if any) into the drive bays.
- 20 Restart the system. Add the new data drive to the database.

System Flash Recovery and E: Drive Replacement

This rebuilds the system drive and re-partitions and formats the physical drive with the E: partition. All of the configuration information and data on the E: drive will be lost.

Note

Recovering the operating system to the C: flash drive can result in changes to the drive letter assignments. It is important that the drive designated as E: is assigned to the 20 GB partition on the first hard drive. The E: drive also contains the page file pagefile.sys. If the E: drive is not the 20 GB partition or the page file pagefile.sys appears on the C: drive, abnormal operation can occur. Run the file C:\DriveShuffle.cmd to re-order the drives. Then delete the pagefile.sys from the C: drive to restore proper operation.

- 1 Shut down the system and remove any data drives. Use care in handling the drives.
- 2 Insert the new E: drive into the top position in the drive bay.
- 3 Connect a keyboard and press the DEL key while starting the system.
- 4 Press the DEL key while starting the system to enter the motherboard BIOS.
- 5 Enter the BIOS password "xellet".
- 6 Select boot options and change the boot priority to be CD ROM, Hard Disk, with the rest disabled.
- 7 Place the recovery DVD into the DVD tray.
- 8 Press F10 to save and restart.
- 9 Enter "1" to select Recover Flash Disk. Press any key when complete.

- 10** Enter "2" to select Recover E: drive.
- 11** After the recovery is complete enter "3" to exit.
- 12** Remove the recovery DVD from the tray and press the reset button.
- 13** Press the DEL key while starting the system. Enter the BIOS password "xellet".
- 14** Select boot options and change the boot priority to be Hard Disk, all others disabled.
- 15** Press F10 to Save and Restart.
- 16** Allow the unit to reboot. The boot splash screen may be displayed for several minutes as the unit reconfigures itself.
- 17** When the system reboots select "No" at the license dialog to return to the Windows desktop. Double click on My Computer and verify that the DVD drive is D: and the 20 GB partition is E:. If not, run the Drives.exe program in the C:\Windows folder.
- 18** Shut down the system and re-install the data drives (if any) into the drive bays. Restart the system.
- 19** Select No to exit Intellex at the license dialog. Right click on the My Computer icon and select Manage.
- 20** Select the device manager and expand the disk drives.
- 21** Right click on the flash disk and select the Policy tab.
- 22** Uncheck the Write Cache Enable box.
- 23** Close the Device Manager and My Computer windows.
- 24** Double click on Intellex.
- 25** Enter the License Key (from the front door label).
- 26** Enter the Intellex configuration data either from a saved configuration file or from the Setup screens.
- 27** Add the new data drive to the database.

Intellex Ultra RAID Configuration

The procedure for recovery of the Intellex Ultra RAID system information depends on the level of recovery required:

- System flash disk only, or
- System flash disk plus E: drive files, or
- RAID array rebuild only, or
- RAID array rebuild and system flash recovery.

System Flash Disk Recovery

To recover the system flash disk the unit is configured to boot from the recovery DVD and the recover flash option is selected.

- 1 Connect a keyboard and press the DEL key while starting the system.
- 2 Enter the BIOS password "xellet".
- 3 Select boot options and change the boot priority to be CD ROM with the rest disabled.
- 4 Place the recovery DVD into the DVD tray.
- 5 Press F10 to save and restart.
- 6 Enter "1" to select Recover Flash Disk.

Note

Do not enter "2" to select E: (drivers, i386). This is not used for RAID systems.

- 7 After the recovery is complete enter "3" to exit.
- 8 Remove the recovery DVD from the tray and press the reset button.
- 9 Press the DEL key while starting the system. Enter the BIOS password "xellet".
- 10 Select boot options and change the boot priority to be Hard Disk, all others disabled.
- 11 Press F10 to save and restart.
- 12 Allow the unit to reboot. The boot splash screen may be displayed for several minutes as the unit reconfigures itself.

The unit will reboot again after the Flash Configuration and the user will be prompted to select video and language.

- 13 Select No to exit Intellex at the license dialog. Right click on the My Computer icon and select Manage.
 - a If new hardware is detected, allow the Hardware Wizard to install the detected hardware.
- 14 Select the device manager and expand the disk drives.
- 15 Right click on the flash disk and select the Policy tab.
- 16 Uncheck the Write Cache Enable box.
- 17 Close the Device Manager and My Computer windows.
- 18 Double click on Intellex.
- 19 Enter the License Key (from the front door label).
- 20 Enter the Intellex configuration data either from a saved configuration file or from the Setup screens.

System Flash Recovery Plus E: Drive Files

To recover the system flash drive the unit is configured to boot from the recovery DVD and the recover flash option is selected. This assumes that the RAID is intact and the E: drive is formatted.

- 1 Connect a keyboard and press the DEL key while starting the system.
- 2 Enter the BIOS password "xellet".
- 3 Select boot options and change the boot priority to be CD ROM with the rest disabled.
- 4 Place the recovery DVD into the DVD tray.
- 5 Press F10 to save and restart.
- 6 Enter "1" to select Recover Flash Disk.

Note

Do not enter "2" to select E: (drivers, i386). This is not used for RAID systems.

- 7 After the recovery is complete enter "3" to exit.
- 8 Press the DEL key while starting the system. Enter the BIOS password "xellet".
- 9 Select boot options and change the boot priority to be Hard Disk, all others disabled.
- 10 Press F10 to save and restart.
- 11 Allow the unit to reboot. The boot splash screen may be displayed for several minutes as the unit reconfigures itself.

Unit reboots again and user is prompted to select video (NTSC/PAL) and language.

- 12 Select "No" at the license entry dialog and double click on the My Computer icon.
 - a If new hardware is detected, allow the Hardware Wizard to install the detected hardware.
- 13 Double click on the DVD drive. Make sure the Recovery DVD is still inside.
- 14 Browse to the D:\RAID\EDRIVE folder
- 15 Double click on the DRIVERS.EXE file to load the drivers.
- 16 Double click on the I386.EXE file to load the system files.
- 17 Double click on the VOLINFO.EXE file to load the volume info file.
- 18 Close the Windows Explorer window and select Start, Shutdown.
- 19 Press the power switch to restart the system.
- 20 When asked to install the license key select "No".
 - a If new hardware is detected, allow the Hardware Wizard to install the detected hardware.
- 21 Double click on the My Computer icon.
- 22 Double click on the C: drive.
- 23 Delete the pagefile.sys file.

Note

Pagefile.sys is a hidden file. Therefore "Show hidden files and folders" must be selected from the Folder Options.

- 24 Close Windows Explorer.
- 25 Right click on the My Computer icon and select Manage.
- 26 Select the device manager and expand the disk drives.

- 27 Right click on the flash disk and select the Policy tab.
- 28 Uncheck the Write Cache Enable box.
- 29 Close the Device Manager and My Computer windows.
- 30 Double click on Intellex.
- 31 Enter the License Key (from the front door label).
- 32 Enter the Intellex configuration data either from a saved configuration file or from the Setup screens.

RAID Array Rebuild

To rebuild the RAID array the system is rebooted and the AMCC RAID controller BIOS is selected. Note: Rebuilding the array assumes that the array is no longer intact (more than one drive has failed and been replaced). All files and data on the array will be lost. This assumes that the flash disk is okay with a bootable system.

- 1 Connect a keyboard and start the system.
- 2 Press and hold the Alt key and press "3" several times to enter the RAID BIOS.

Note

NumLock is disabled when the system reboots! Use the number 3 key above the letters at the top of the keyboard.

- 3 If any RAID units exist, select them by using the arrow keys and Enter key (an asterisk will appear) and delete them by selecting the Delete Unit option at the bottom of the screen.
- 4 Create a new unit by selecting all 4 drives and selecting Create Unit at the bottom of the screen.
- 5 Set the RAID parameters to RAID 5, 16 KB stripes, Write cache enabled, and Continue on source error disabled.
- 6 Click OK and press "Y" to continue.
- 7 Press F8 to create the array.
- 8 Press "Y" to delete the existing array.
- 9 Allow the system to reboot and exit the Intellex application to the Windows desktop.
- 10 Load the recovery DVD into the DVD tray.
- 11 Double click on the My computer icon.
- 12 Double click on the DVD drive.
- 13 Double click on the RAID folder.
- 14 Double click on the RAID.bat file.
- 15 Allow the batch file to run, which will partition and format the RAID array and load the E: drive files. This will take several minutes.
- 16 When the 3DM2 installation dialog appears, click OK and select the defaults for installation. A Information Dialog Box appears: To connect to 3DM2...
- 17 Reboot the system after the batch file completes.
- 18 Allow the system to reboot and exit the Intellex application to the Windows desktop.
- 19 Double click on the My Computer icon.
- 20 Double click on the C: drive icon.

- 21 Delete the pagefile.sys file.
- 22 Close Windows Explorer.
- 23 Double click on the Drive Config icon. Click Yes to complete.
- 24 Double click on the Intellex icon to start the Intellex application.

RAID Array Rebuild and System Reload

This rebuilds the RAID array and reloads all of the program files which will clear any data on the system.

- 1 Connect a keyboard and start the system.
- 2 Press the DEL key while starting the system to enter the motherboard BIOS.
- 3 Enter the BIOS password "xellet".
- 4 Select boot options and change the boot priority to be CD ROM, Hard Disk, with the rest disabled.
- 5 Place the recovery DVD into the DVD tray.
- 6 Press F10 to save and restart.
- 7 Press and hold the Alt key and press "3" several times to enter the RAID BIOS.

Note

NumLock is disabled when the system reboots! Use the number 3 key above the letters at the top of the keyboard.

- 8 If any RAID units exist, select them (an asterisk will appear) and delete them by selecting the Delete Unit option at the bottom of the screen.
- 9 Create a new unit by selecting all 4 drives and selecting Create Unit at the bottom of the screen.
- 10 Set the RAID parameters to RAID 5, 16 KB stripes, Write cache enabled, and Continue on source error disabled.
- 11 Click OK and press "Y" to continue.
- 12 Press F8 to create the array and allow the system to restart. It will boot from the DVD.
- 13 Enter "1" to select Recover Flash Disk.

Note

Do not enter "2" to select E: (drivers, i386). This is not used for RAID systems.

- 14 After the recovery is complete enter "3" to exit.
- 15 After exit the system remains in MSDOS mode. Press CTRL+ALT+DEL to reboot.
- 16 Press the DEL key while starting the system. Enter the BIOS password "xellet".
- 17 Select boot options and change the boot priority to be Hard Disk, all others disabled.
- 18 Press F10 to save and restart. It may take several minutes to reboot.
 - a If new hardware is detected, allow the Hardware Wizard to install the detected hardware.
 - b Allow the Flash Configuration Window to complete.
 - c Reboots automatically! Don't press Restart button when the message appears onscreen.
 - d When prompted, select Video and Language.
 - e Select "No" at the license entry dialog.

- 19 Double click on the My computer icon.
- 20 Double click on the DVD drive.
- 21 Double click on the RAID folder.
- 22 Double click on the RAID.bat file.
- 23 Allow the batch file to run which will partition and format the RAID array and load the E: drive files. This will take several minutes.
- 24 When the 3DM2 installation dialog appears, click OK and select the defaults for installation.
- 25 Reboot the system after the batch file completes.
- 26 Allow the system to reboot and exit the Intellex application to the Windows desktop.
 - a If new hardware is detected, allow the Hardware Wizard to install the detected hardware.
- 27 Double click on the My Computer icon.
- 28 Double click on the C: drive icon.
- 29 Delete the pagefile.sys file.
- 30 Close Windows Explorer.

Note

A window to reboot the unit might pop up at this point. Select "No".

- 31 Double click on the Drive Config icon. Click Yes to complete.
- 32 Right click on the My Computer icon and select Manage.
- 33 Select the device manager and expand the disk drives.
- 34 Right click on the flash disk, select Properties and select the Policy tab.
- 35 Uncheck the Write Cache Enable box.
- 36 Close the Device Manager and My Computer windows.
- 37 Double click on Intellex.
- 38 Double click on the Intellex icon to start the Intellex application.
- 39 Enter the License Key (from the front door label). Don't forget to tag the features of your unit from the list.
- 40 Enter the Intellex configuration data either from a saved configuration file or from the Setup screens.

RAID Array Recovery Procedures

If a RAID volume becomes degraded or is lost, an email alert notification should be received. This message will look similar to the following:

- Title: 3ware 3DM2 alert -- host: MACHINE_NAME
- Body: 2yyymmddhhmmss - Controller 0
ERROR - Degraded unit: unit=0, port=[1/2/3/4]

The following steps guide you through identifying the faulty drive, replacing it, and rebuilding the array. With the Intellex Ultra, all this can be accomplished without powering off the unit. Begin the recovery process by identifying the severity of the failure.

Note

Note: There may be other causes that may trigger an email notification, such as loose cables or connections. Make sure all such possibilities are eliminated before applying these procedures. These procedures cover restoring hard disks that have physically failed.

Array Recovery Procedures: Identify Severity

- 1 Exit Intellex.
- 2 Launch the 3ware (3DM2) Utility from the Ultra Unit by double clicking on the desktop icon.
- 3 Click "Yes" on the Security Alert window to proceed.
- 4 Select "Administrator" from the Login dropdown box and enter "3ware" as password. These are the default credentials.
- 5 Click on the Information->Unit Information button from the main menu.
- 6 The status for the unit may be listed as DEGRADED if only one drive was lost. If two or more drives are lost, the status will be listed as ERROR or INOPERABLE.
- 7 Click on the Management->Maintenance button from the main menu.
- 8 Identify which disk or disks are malfunctioning. A red label of DEGRADED will be next to a disk which is experiencing problems. If the status is listed as INOPERABLE skip down to the section Recovery Procedures: Inoperable Array.

Array Recovery Procedures: Degraded Array

A single drive has failed and data has not been lost.

- 1 Follow steps 1-4 under Recovery Procedures: Identify Severity to get to the maintenance menu.
- 2 Click the Remove Drive hyperlink next to the faulty disk. Click OK when prompted.
- 3 Physically remove and replace the faulty disk.
- 4 Click the Rescan Controller button until you see the replacement disk shown in the Available Drives section near the bottom.
- 5 Check the checkbox Unit 0 under Unit Maintenance.
- 6 Click the Rebuild Unit button.
- 7 Select the replacement drive when prompted, then click OK.
- 8 The Unit should be listed as Rebuilding x%.
- 9 Depending on Disk/CPU load, this process may take several hours.

- 10 The drive will function with reduced performance until the rebuild process is complete.
- 11 Restart Intellex.

Array Recovery Procedures: Inoperable Array

Two or more drives have failed and data has most likely been lost.

- 1 Follow steps 1-4 under Recovery Procedures: Identify Severity to get to the maintenance menu.
- 2 Faulty disks will be listed as NOT PRESENT.
- 3 For any disks labeled DEGRADED, Click the Remove Drive hyperlink next to the faulty disk. Click OK when prompted.
- 4 Physically remove and replace all faulty/degraded disks.
- 5 Click the Rescan Controller button until you see the replacement disks shown in the Available Drives section near the bottom.
- 6 Check the checkbox Unit 0 under Unit Maintenance.
- 7 Click the Rebuild Unit button.
- 8 Select the replacement drive when prompted, then click OK.
- 9 The Unit should be listed as Rebuilding x%.
- 10 Depending on Disk/CPU load, this process may take several hours.
- 11 Follow the procedures for restoring an Intellex Ultra RAID Volume. This includes repartitioning the volume and restoring required files.
- 12 The RAID Volume will function with reduced performance until the rebuild process is complete.
- 13 Restart Intellex.

Intellex Ultra RAID Failure Notification

You may set up your Intellex to send automatic email notifications of your Intellex Ultra RAID array failures.

Requirements

- Simple Mail Transport Server (SMTP)
- Email address that will be alerted to notifications

Recommendations

- Use a dedicated SMTP server and not a service on the local machine.
- Use an email address that is generic (i.e. admin@yourdomain.com) and forwards to a responsible party. Do not send email alerts to the address of an individual who may leave the company.

Setting up Automatic E-mail Notification

- 1 Exit Intellex.
 - 2 Launch the 3ware (3DM2) Utility from the Ultra Unit.
 - 3 Login (Default credentials are administrator/3ware).
 - 4 Click on the 3DM2 Settings button from the main menu.
 - 5 Use the Following Settings:
 - a Send Email: Enabled
 - b Notify On: WARNING
 - c Sender: The name you want to appear in the FROM on the notification email.
- Note**
- If you do not put an appropriate domain name in the FROM address, your email server may block it as spam. Recommendations: (Be specific)
- IntellexRAIDWarehouse@yourdomain.com
 - IntellexRAIDCountingRoom@yourdomain.com
- 6 Recipients: All recipients, multiple recipients are required to be separated by a comma or semicolon.
 - 7 Mail Server (name or IP): Your email server address.
 - 8 Click Save E-mail Settings.
 - 9 Click Send Test Message to verify your settings are correct and alert the email address you have designated.
 - 10 The test message should be received with the following title:
3ware 3DM2 alert -- host: MACHINE_NAME
 - 11 See your network administrator for any network configuration/connectivity issues.