



*Administrators' Guide*  
***DeviceGuard***

Stand: 22.11.2005  
Version: 1.31

*DeviceGuard*

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# 1 About DeviceGuard

DeviceGuard is a tool which allows you to monitor and manage:

- Logical Drives,
- USB Devices,
- Serial Ports and Parallel Ports,
- Firewire Ports and Infrared Ports
- WLAN Devices.

DeviceGuard is installed as a service on a client computer; ideally it is managed using the Microsoft Active Directory (group policies). DeviceGuard can be used on client computers running under Windows 2000, Windows XP and Windows 2003. There are no specific server requirements for using DeviceGuard. Although we recommend Windows 2000/2003 Server and Active Directory, you may use any server technology, provided it allows you to remotely change the Registry settings of client PC (i.e. ZENworks).

## 1.1 Monitoring Drives

DeviceGuard continually monitors all drives which are available on a user desktop. The type of drive in question (e.g. floppy disk drive, removable drive, CD/DVD/CD-RW) is used to determine whether or not a particular drive is made available to a user. If DeviceGuard detects a prohibited type of drive, it locks all access to the drive and, if desired, hides the drive so that it is not visible on the computer. For example, if a USB memory stick is connected to the USB port of a computer, Windows installs the drivers needed to operate the drive. As soon as the drivers have been installed, DeviceGuard intervenes and identifies the type of drive. If you prohibit the use of removable drives on computers, as well as locking all access to the drive you also have the option of hiding the drive from the user (recommended). This is a very useful function and means that the computer appears to have no memory stick connected to it.

## 1.2 Monitoring Ports

### 1.2.1 Monitoring USB Ports

DeviceGuard can also monitor any USB devices connected to a computer. USB devices are identified using their Vendor ID (VID) and Product ID (PID) details. VID details are allocated to manufacturers by a central organisation on the basis of international regulations. Each manufacturer can assign their own PID details for their products. If you want to monitor a specific device, you can enter the precise VID and PID values in the monitor list. However, if you only want to monitor all devices made by a particular manufacturer, you simply add the VID for that manufacturer to the list. You can also monitor devices using USB device classes. This allows you to permit the use of input devices (HID – Human Input Devices), while locking USB storage devices (USBStor). There are two basic methods for monitoring USB devices:

#### **Allow only specific devices**

DeviceGuard checks all installed devices using the specified lists (VID-PID and/or classes) and locks those devices which are not contained in the list. Devices whose names contain ROOT are not locked because they are usually essential USB hubs.

#### **Lock specific devices**

In this case, DeviceGuard only locks those devices that are contained in the list. No other devices are affected.

Both methods are quite time-consuming for administrators but they do provide a high level of security because, instead of locking devices at the presentation layer, they lock devices much earlier at the driver layer. The administrative workload is much less when devices are monitored using USB classes. You can easily find all of the information needed to manage the way devices are monitored using the *USBTOOL.EXE* command line tool which is included with DeviceGuard.

### **1.2.2 Monitoring Parallel, Serial, Firewire, Infrared, Bluetooth Ports**

DeviceGuard can monitoring parallel, serial, FireWire, Bluetooth and infrared ports and according to central policies user and/or computer-specifically the access to it control (unlock/lock). Not the attached devices are locked or unlocked themselves, but only the appropriate port. Exist at a PC/Notebook several ports of same type (e.g.: COM1, COM2), then all ports are always locked/unlocked - a differentiation is not possible.

### **1.3 Security**

Normal users and power-users cannot close DeviceGuard or end any of its processes (tasks) – this can only be done by administrators. This ensures that there is no way of bypassing or cancelling the device restrictions. What's more, normal users and super-users cannot delete DeviceGuard program files.

### **1.4 Administration**

DeviceGuard can only be configured using the Registry of the PC it is installed on. We have provided a policy template (*DeviceGuard.adm*) which can be used to manage the PCs on a network centrally. This policy can be used on a Windows 2000/2003 Server with Active Directory. Although we recommend the use of Windows 2000/2003 Server with Active Directory, it is not essential. Any technology that allows you to remotely change the Registry settings of a PC can be used (for Novell ZENworks or ScriptLogic). All of the Registry configuration options are detailed in this guide.

### **1.5 Reporting**

DeviceGuard can also record its activities in a log file and send SMTP alerts if necessary. These functions must be explicitly activated in order to work.

The log file *DeviceGuard.log* is located in the directory `.. \SYSTEM32`. If size of *deviceguard.log* obtain 1 MByte, *deviceguard.log* will saved as *deviceguard\_.log* and a new *deviceguard.log* is created.

SMTP messages are only sent if a device is detected which has been locked by a policy.

To protect the privacy of users, it is possible to suppress all user details in the reporting and SMTP messaging processes. Doing this means it is not possible to see which user was logged on to a PC when a device was locked. For more information, see "Configuring and Administrating DeviceGuard".

### **1.6 System Requirements**

DeviceGuard Service:

- Windows 2000
- Windows XP
- Windows 2003

DeviceGuard Monitor required additionally Microsoft .NET Framework 1.1 on the computer, on which DeviceGuard Monitor is running.

## 2 Installing DeviceGuard

DeviceGuard will be distributed in two versions (Download version and CD version). The CD version contains additionally Microsoft .NET Framework and Group Policy Management Console (GPMC).

### Contents of the Download version (1 MByte):

DeviceGuard.adm	Policy template for administration
DeviceGuard_AdminGuide.pdf	This Administrators' Guide
DeviceGuard.msi	MSI package for DeviceGuard service
DeviceGuardMonitor.exe	Monitoring tool for DeviceGuard
DevCheck.exe	Tool for determining device properties
Usbtool.exe	Tool for determining USB device properties
whatsNew.txt	Latest news about the current version

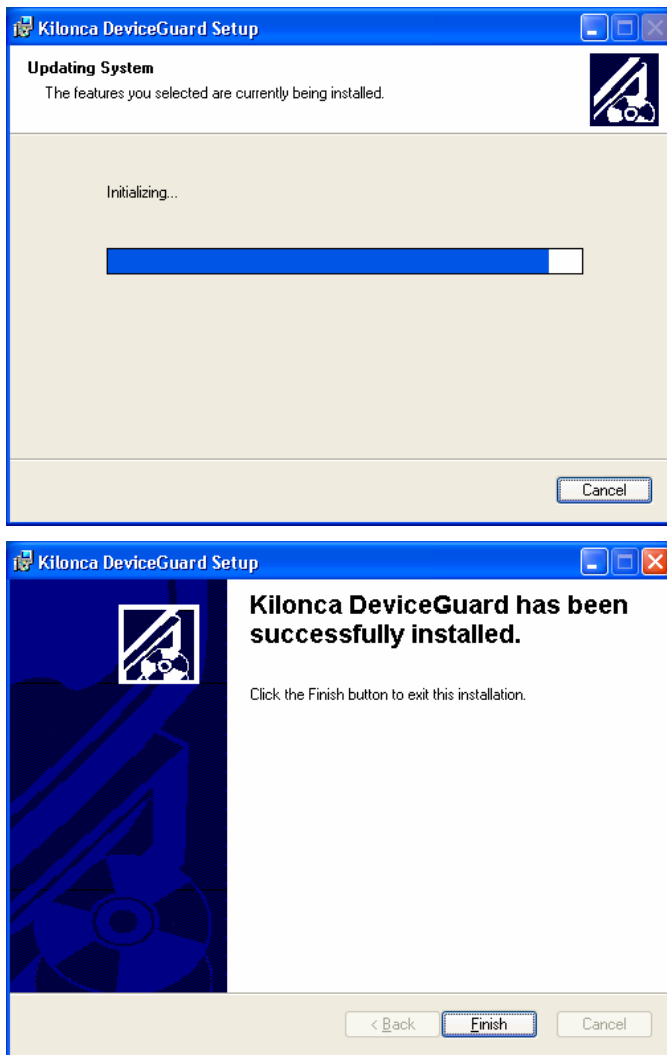
### Contents of the CD version (30 MByte):

DeviceGuard.adm	Policy template for administration
DeviceGuard_AdminGuide.pdf	This Administrators' Guide
DeviceGuard.msi	MSI package for DeviceGuard service
DeviceGuardMonitor.exe	Monitoring tool for DeviceGuard
DevCheck.exe	Tool for determining device properties
Usbtool.exe	Tool for determining USB device properties
whatsNew.txt	Latest news about the current version
DOTNETFX.EXE	Microsoft .NET Framework 1.1
Gpmc.msi	Microsoft Group Policy Management console

### 2.1 Manual Installation

To install DeviceGuard manually, use the MSI package *DeviceGuard.msi*. You do not need to enter any configuration parameters.





The registry values needed to configure DeviceGuard are not automatically created during installation. Only the standard "unconfigured" service is installed during installation.

To install DeviceGuard, you must have administrative privileges.

## 2.2 Silent Installation

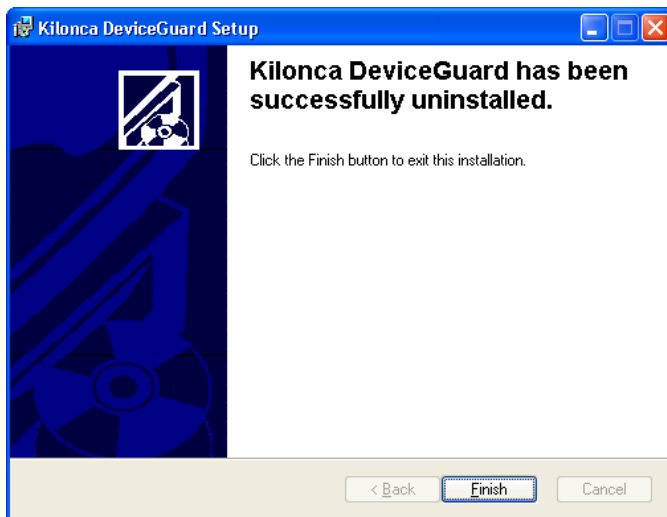
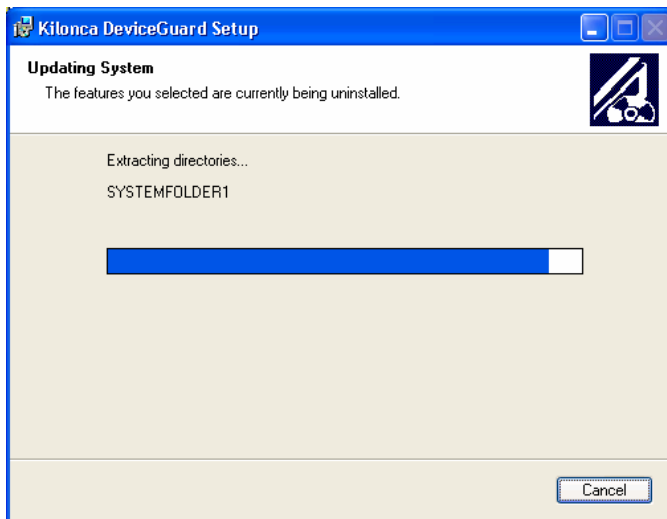
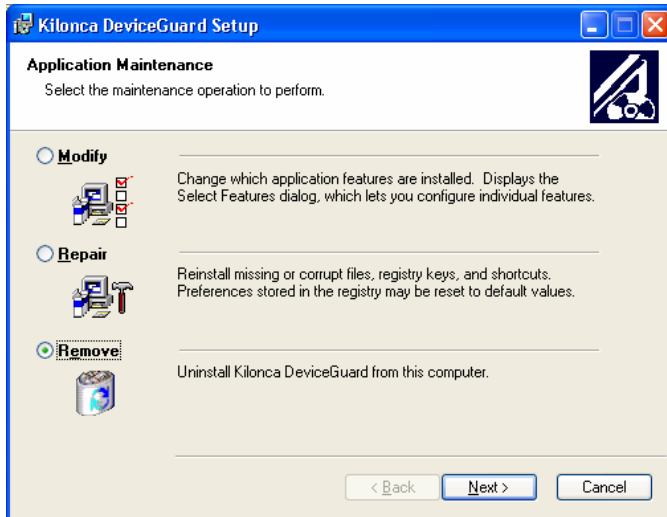
To install DeviceGuard discreetly or as part of a script or with a software deployment solution, run the MSI package *DeviceGuard.msi* with the following command line parameter:

```
msiexec /qn /i deviceguard.msi
```

When the installation runs, no dialog appears on the screen.

## 2.3 Uninstalling DeviceGuard manually

To install DeviceGuard manually, use the MSI package *DeviceGuard.msi*. You do not need to enter any configuration parameters.



When you uninstall DeviceGuard, all of the Registry values created by DeviceGuard are removed and all restrictions are lifted. The *DeviceGuard.log* log file is also deleted during installation.

## 2.4 Silent Uninstallation

To install DeviceGuard discreetly or as part of a script or with a software deployment solution, run the MSI package *DeviceGuard.msi* with the following command line parameter:

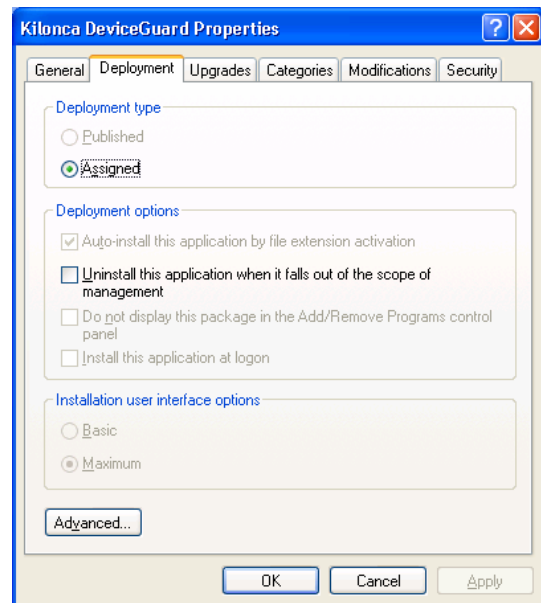
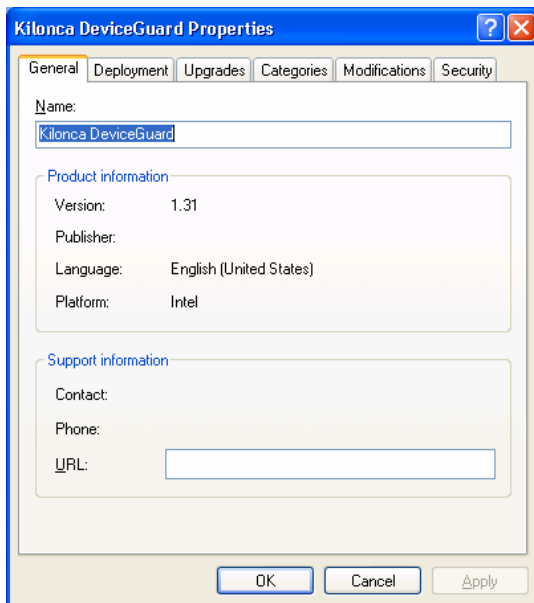
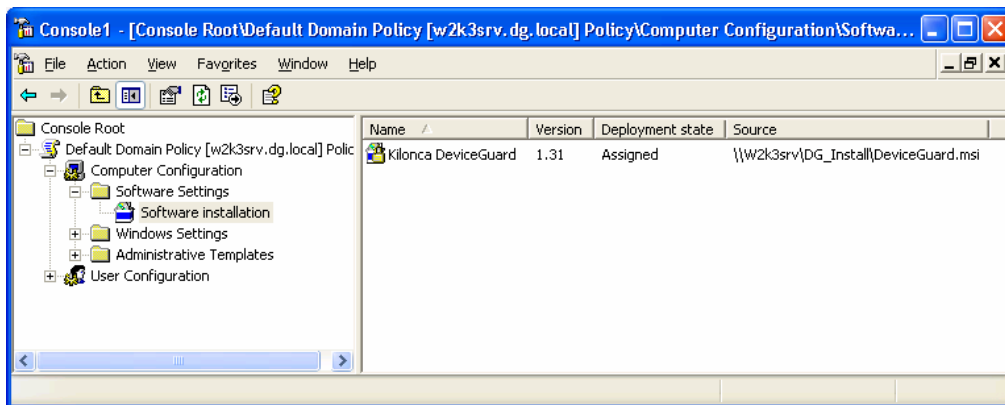
```
msiexec /qn /x deviceguard.msi
```

To uninstall DeviceGuard, you must have administrative privileges.

## 2.5 Installation and Uninstallation (Active Directory)

### 2.5.1 Installation

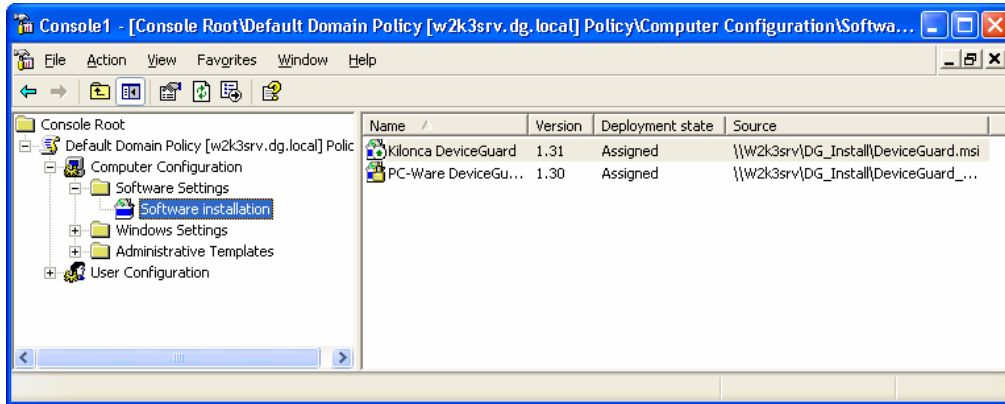
DeviceGuard service installation can be done using Active Directory software deployment solution. Therefore you have to create and assign a software package in a group policy under Computer Configuration/Software Settings/Software Installation. Make sure that installation source path is an accessible UNC path.



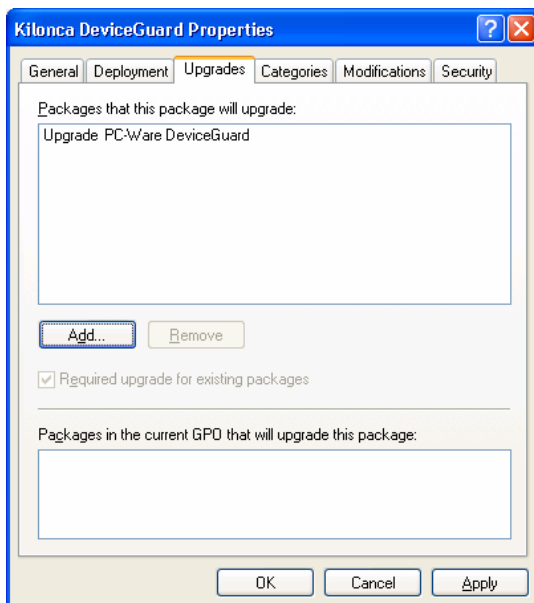
After activating group policy the MSI package *DeviceGuard.msi* will be installed after system reboot on all computers being part of the group policy.

## 2.5.2 Update

To update a former DeviceGuard version you have to add the new MSI package as a software package:



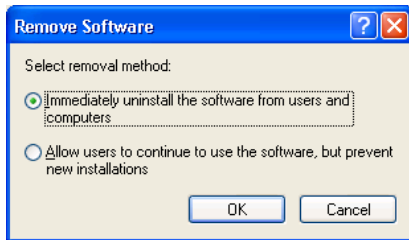
The new software package will be defined as update package of the former version. All computers will be updated to the new version after system reboot.



### 2.5.3 Uninstallation

To uninstall a software package go to the group policy management console and right click "Remove". Choose the option "Immediately uninstall the software from users and computers" and confirm with OK.

The software package will be deleted in group policy management console. The Uninstallation on the computers will be done after system reboot.



## 3 Configuring and Administrating DeviceGuard

DeviceGuard can only be configured using Registry values. The configuration can be either *computer-specific* or *user-specific*. However, certain configuration values are exclusively computer-specific. Configuration should ideally be carried out using Active Directory group policies. To do this, you will need to import the *DeviceGuard.adm* policy template file.

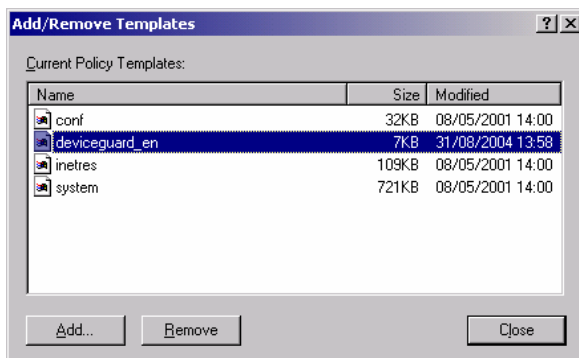
To edit Registry values, you must have administrator privileges for the PC on which DeviceGuard is installed. If you configure DeviceGuard using Active Directory group policies, the PC only needs to be a member of the domain.

If a value is not configured, none of the actions governed by that value are performed (see 3.2 and 3.1).

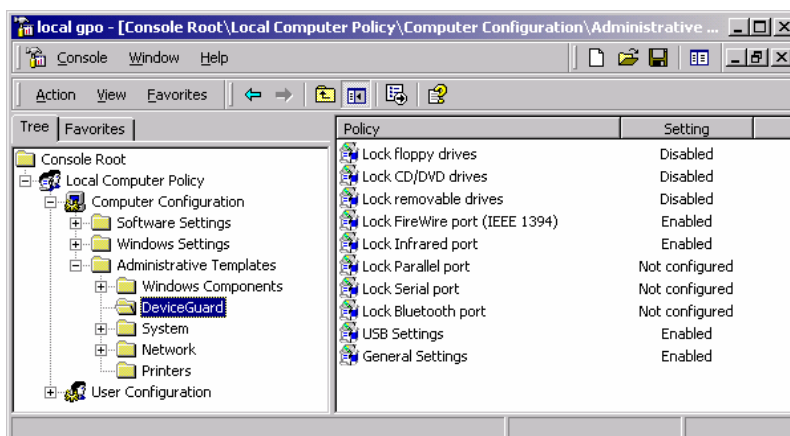
### 3.1 Administration Using Group Policies

#### 3.1.1 Import ADM template

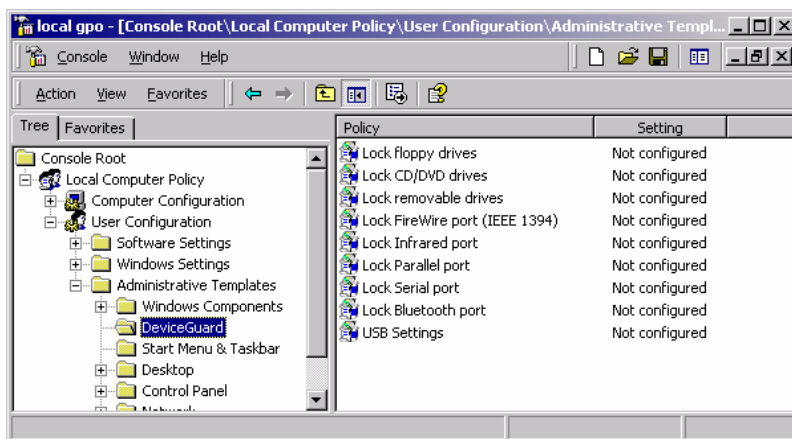
If you want to use group policies to manage DeviceGuard, you must first import the *DeviceGuard.adm* template into the Administrative templates.



Computer Configuration:



User Configuration:



### 3.1.2 Drive and port configuration

#### 3.1.2.1 Configuration rules

Computer policy value	User policy value	Result	Comment
Not configured	Not configured	Unlocked	No policy set
Not configured	Deactivated	Unlocked	User policy unlocks drive/port
Not configured	Activated	Locked	User policy locks drive/port
Deactivated	Not configured	Unlocked	Computer policy unlocks drive/port. User policy has no effect
Deactivated	Deactivated	Unlocked	Drive/port unlocked by user and computer policy
Deactivated	Activated	Locked	User policy locks drive/port and overrules computer policy settings
Activated	Not configured	Locked	Computer policy locks drive/port, user policy has no effect.
Activated	Deactivated	Unlocked	User policy unlocks drive/port and overrules computer policy settings
Activated	Activated	Locked	User policy and computer policy lock drive/port.

If you define computer and user policies for a PC, priority is always given to the user policy; drives will be locked on the basis of the user-specific values, if configured. If not, computer-specific values will be used.

#### Lock Floppy Disk Drives

Disabled	Floppy disk drive is unlocked
Enabled	Floppy disk drive is locked
Not configured	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

**Lock CD/DVD Drives**

<b>Disabled</b>	CD/DVD drives are unlocked
<b>Enabled</b>	CD/DVD drives are locked
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

**Lock Removable Drives**

<b>Disabled</b>	Removable drives are unlocked
<b>Enabled</b>	Removable drives are locked
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

**Lock FireWire Ports**

<b>Disabled</b>	FireWire Ports are unlocked
<b>Enabled</b>	FireWire Ports are locked
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

**Lock Infrared Ports**

<b>Disabled</b>	Infrared Ports are unlocked
<b>Enabled</b>	Infrared Ports are locked
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

**Lock Parallel Ports**

<b>Disabled</b>	Parallel Ports are unlocked
<b>Enabled</b>	Parallel Ports are locked
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

**Lock Serial Ports**

<b>Disabled</b>	Serial Ports are unlocked
<b>Enabled</b>	Serial Ports are locked
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

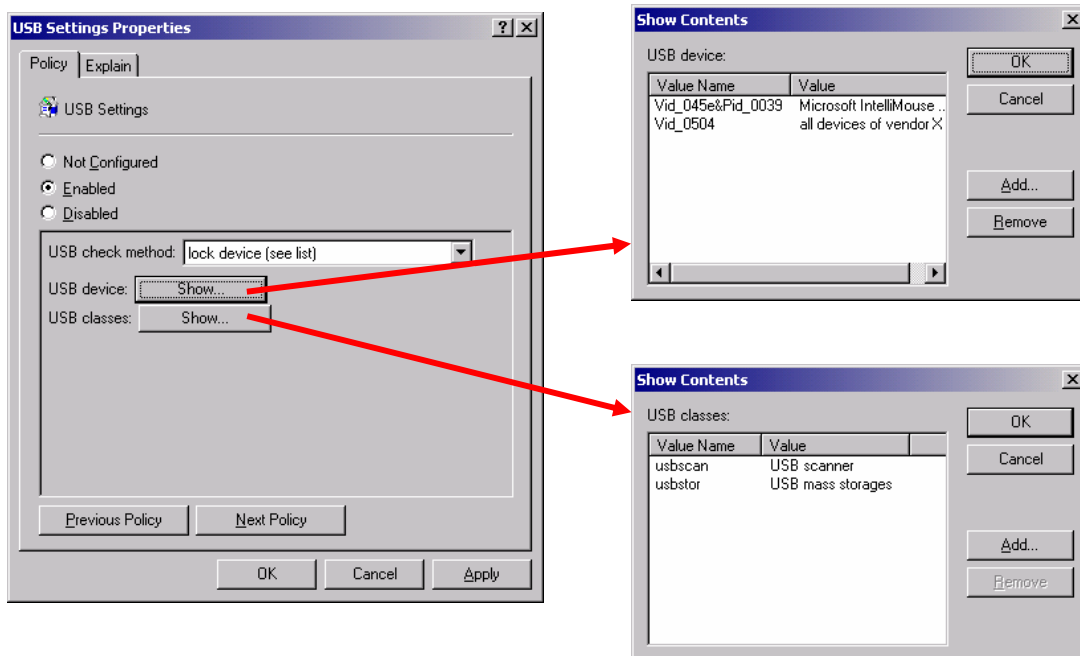
**Lock WLAN Devices**

<b>Disabled</b>	WLAN devices are unlocked
<b>Enabled</b>	WLAN devices are locked

<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).
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### 3.1.3 USB Settings

<b>Disabled</b>	USB devices are not monitored
<b>Enabled</b>	USB devices are monitored (additional settings are required)
<b>Not configured</b>	No USB settings are configured on the target system (this is only useful if the relevant policy specifies that an existing configuration must not be changed).



The following USB check methods are available:

- **Lock devices using list**
- **Allow devices using list**

The USB check methods refer to both the USB device list and the USB class list.

**Note:**

If one of the lists is empty, you must enter dummy values because the listbox control element does not accept empty lists when the policy is active. The best solution is simply to enter the word "Dummy" in the list because it is extremely unlikely that a genuine USB device or class will contain this text. This will prevent a real USB device or class being accidentally included in the policy. Never enter "1" or "a" in the list as these characters are used in a vast number of VID/PID values and USB classes.

### 3.1.3.1 USB configuration rules

Computer policy value	User policy value	Comment/Result
Deactivated	Deactivated	no check
Deactivated	Activated + allow listed devices	Allows listed USB devices and/or USB classes configured in user policy. All other devices/classes will be locked.
Deactivated	Activated + lock listed devices	Locks listed USB devices and/or USB classes configured in user policy. All other devices/classes will be allowed.
Activated + allow listed devices	Deactivated	Allows listed USB devices and/or USB classes configured in computer policy. All other devices/classes will be locked.
Activated + allow listed devices	Activated + allow listed devices	Allows listed USB devices and/or USB classes configured in user <u>and</u> computer policy. All other devices/classes will be locked.
Activated + allow listed devices	Activated + lock listed devices	Allows listed USB devices and/or USB classes configured in computer policy <u>less</u> listed USB devices and/or USB classes configured in user policy. All other devices/classes will be locked.
Activated + lock listed devices	Deactivated	Locks listed USB devices and/or USB classes configured in computer policy. All other devices/classes will be allowed.
Activated + lock listed devices	Activated + allow listed devices	Locks listed USB devices and/or USB classes configured in computer policy <u>less</u> listed USB devices and/or USB classes configured in user policy. All other devices/classes will be allowed.
Activated + lock listed devices	Activated + lock listed devices	Locks listed USB devices and/or USB classes configured in user <u>and</u> computer policy. All other devices/classes will be allowed.

### 3.1.4 General Settings

The *General Settings* must be enabled and configured in a policy which applies to all DeviceGuard PCs. In all other policies which are used to provide differentiated access to drives or USB devices, the *General Settings* must be set to "Not defined".

*General Settings* are related to:

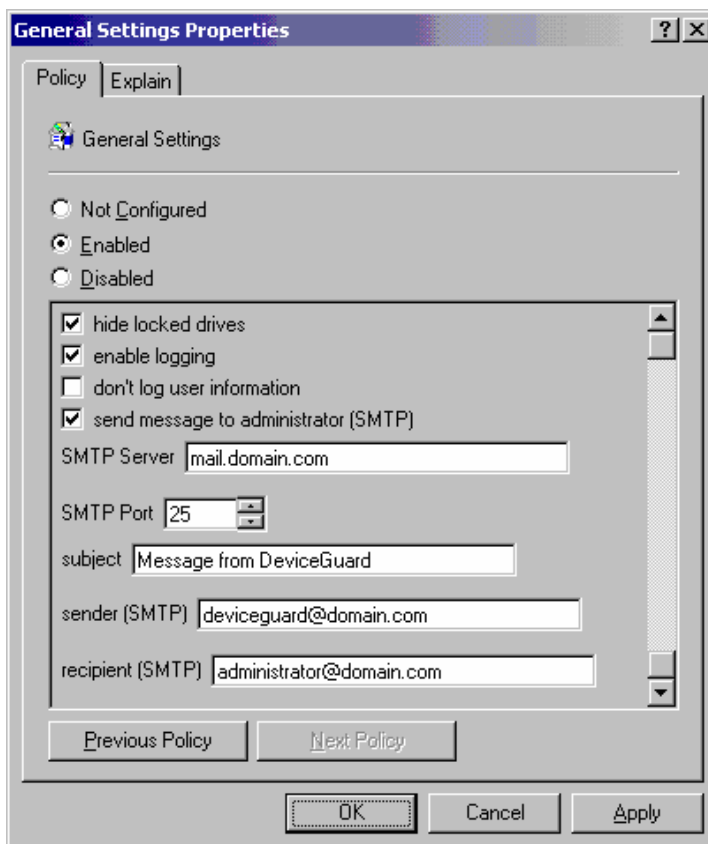
- Handling of locked drives
- Logging settings
- EMail settings

Enable / disable *General Settings*

<b>Disabled</b>	Not appropriate because no general settings have been configured
<b>Enabled</b>	The general settings for DeviceGuard have been configured (additional settings are required -> see below)
<b>Not configured</b>	The value is not configured on the target system (this is only useful if a policy specifies that an existing configuration must not be changed).

Settings

Setting	Description
Hide locked drives	Hides logical drives as soon as they are locked by DeviceGuard (no user access possible anymore)
Write log file	Logs all DeviceGuard activities in ..\SYSTEM32\deviceguard.log.
Don't log user information	No user information will be logged.
Send message to administrator (SMTP)	Sends a message to a specified address when DeviceGuard locks as device.
Sender (SMTP)	SMTP address of sender (e.g.: DeviceGuard@domain.com)
Recipient (SMTP)	SMTP address of recipient (e.g.: alert@domain.com)
SMTP Server	SMTP server used for sending alerts (e.g.: mail.domain.com)
SMTP Port	SMTP server port (e.g.: 25)
Subject	Subject of SMTP mail



## 3.2 Basic Registry Values

### 3.2.1 General configuration

Registry Path: HKLM\Software\Policies\PC-Ware\DeviceGuard

Registry Value:	Type	Description
HideDrive	DWORD	1 – hide locked drives 0 – do not hide locked drives
LoggingLevel	DWORD	0 – nothing, 1 – Reporting in log file
SendAlertToAdmin	DWORD	0 – nothing, 1 – Alert to address specified in "MailTo"
MailFrom	REG_SZ	SMTP address of sender (for example, DeviceGuard@domain.com)
MailTo	REG_SZ	SMTP address of recipient (for example, alert@domain.com)
SMTPServer	REG_SZ	SMTP server used for sending alerts (for example, mail.domain.com)
SMTPPort	DWORD	SMTP server port (for example, 25)
Subject	REG_SZ	Subject of SMTP mail
NoUserInfos	DWORD	0 – Logging WITH user information 1 – Logging WITHOUT user information

**Note:**

DeciveGuard must be restarted before the changes to the alert configuration become active.

### 3.2.2 Drive and Port Configuration (without USB)

Registry Path: HKLM\Software\Policies\PC-Ware\DeviceGuard ← Computer Values

Registry Path: HKCU\Software\Policies\PC-Ware\DeviceGuard ← User Values

Registry Value:	Type	Description
LockFloppy	DWORD	0 – Floppy drive is unlocked 1 – Floppy drive is locked
LockCD	DWORD	0 – CD/DVD/CDRW drive/writer is unlocked, 1 – CD/DVD/CDRW drive/writer is locked
LockRemovable	DWORD	0 – Removable drive is unlocked, 1 – Removable drive is locked
Lock1394	DWORD	0 – firewire port is unlocked, 1 – firewire is locked
LockInfrared	DWORD	0 – infrared port is unlocked 1 – infrared port is locked
LockParallel	DWORD	0 – parallel port is unlocked 1 – parallel port is locked
LockSerial	DWORD	0 – serial port is unlocked 1 – serial port is locked
LockWIFI	DWORD	0 – WLAN Port is unlocked 1 – WLAN Port is locked

**Note:**

If you configure different computer-specific and user-specific values, priority is always given to the user-specific values when the policy is implemented. This means that removable drives may be locked initially on all PCs (computer-specific) and then released for specific users or groups of users with user-specific values.

### 3.2.3 Registry Settings for Monitoring USB Devices

**Registry Path:** `HKLM\Software\Policies\PC-Ware\DeviceGuard` ← Computerwerte

**Registry Path:** `HKCU\Software\Policies\PC-Ware\DeviceGuard` ← Userwerte

Registry Value:	Type	Description
CheckUSB	DWORD	0 – USB device list is not checked 1 – Permit only USB devices contained in the list 2 – Lock USB devices not contained in the list Values 1 and 2 require additional Registry values -> see " <a href="#">USB configuration rules</a> "

**Important note:**

If you use user and computer policies for monitoring USB devices pay attention to "[USB configuration rules](#)".

We recommend to choose a monitoring strategie which uses only user policy settings or computer policy settings.

Beside above mentioned registry value *CheckUSB* further settings for controlling USB device access are required:

**List of Individual USB Devices:**

`HKLM/HKCU\Software\Policies\PC-Ware\DeviceGuard\USB` must contain a list of all USB devices that you want to monitor along with the relevant VID / PID information. These values are fixed-length REG\_SZ text strings.

**List of USB Device Classes:**

`HKLM/HKCU\Software\Policies\PC-Ware\DeviceGuard\USBClasses` must contain a list of all USB classes that you want to monitor. These values are fixed-length REG\_SZ text strings.

The *CheckUSB* value in `HKLM/HKCU\Software\Policies\PC-Ware\DeviceGuard` determines whether the devices contained in the list are to be locked or permitted.

If USB devices are monitored by means of user and computer policies, make sure that the monitoring method (*CheckUSB*=1 or 2) is identical from a user-specific and computer-specific point of view. It is not possible to allow a USB device with user-specific settings, while at the same time locking the USB device using computer-specific settings.

**USB Devices (VID/PID)**

`HKLM\Software\Policies\PC-Ware\DeviceGuard\USB` ← Computer Values

`HKCU\Software\Policies\PC-Ware\DeviceGuard\USB` ← User Values

Registry Value:	Type	Description
<VID/PID Value>	REG_SZ	This value is the definitive VID-PID value for the USB device you want to monitor. If you specify only the VID value, you can monitor all devices from a specific manufacturer (see Annex).

		The precise content of the VID-PID value is not important. It can be used to contain a helpful description of the USB device.
--	--	---

### USB Device Classes

HKLM\Software\Policies\PC-Ware\DeviceGuard\USBClasses ← Computer Values

HKCU\Software\Policies\PC-Ware\DeviceGuard\USBClasses ← User Values

Registry Value:	Type	Description
<USB-Device-Class>	REG_SZ	This value is the definitive USB class for the USB devices you want to monitor. The precise content of the USB device class is not important. It can be used to contain a helpful description of the USB device class.

USB device classes are evaluated using the *Service* value in the Registry. This value is contained in the subkey for a USB device.

Standard USB Device Classes	
HidUsb:	Input devices (keyboard, mouse, joystick, steering wheel...)
USBStor:	USB storage devices (USB hard disks, memory sticks, many digital cameras, ...)
USBScan:	Scanner
USBPrint:	Printer
USBSer:	Serial USB devices (for example, USB modems)

#### Note:

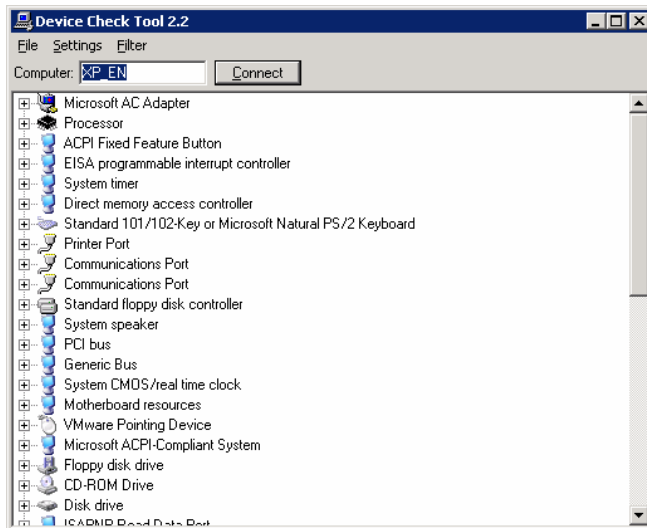
The device classes **USBHub** and **USBHub20** are not monitored. This ensures that the computer's internal USB hub is always ready for use. Many device manufacturers use their own special USB drivers with class descriptions they have defined themselves. If you want to successfully monitor such devices, you need to know the correct USB classes (*Service*) in the Registry.

CheckUSB value in computer policy	CheckUSB value in user policy	Ergebnis/Bemerkungen
0	0	No check / all USB devices are allowed
0	1	Allows listed USB devices and/or USB classes configured in user policy. All other devices/classes will be locked.
0	2	Locks listed USB devices and/or USB classes configured in user policy. All other devices/classes will be allowed.
1	0	Allows all in computer policy listed USB devices and/or classes, locks all others.
1	1	Allows listed USB devices and/or USB classes configured in user <u>and</u> computer policy. All other devices/classes will be locked.
1	2	Allows listed USB devices and/or USB classes configured in computer policy <u>less</u> listed USB devices and/or USB classes configured in user policy. All other devices/classes will be locked.
2	0	Locks listed USB devices and/or USB classes configured in computer

		policy. All other devices/classes will be allowed.
2	1	Locks listed USB devices and/or USB classes configured in computer policy <u>less</u> listed USB devices and/or USB classes configured in user policy. All other devices/classes will be allowed.
2	2	Locks listed USB devices and/or USB classes configured in user <u>and</u> computer policy. All other devices/classes will be allowed.

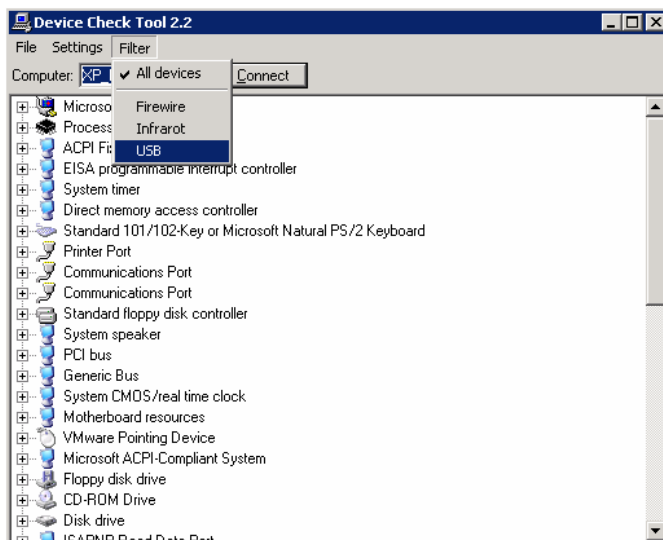
### 3.2.4 Finding USB Device Properties Using DEVCHECK.EXE

Device Check Tool lists all installed devices on a local or a remote computer. It provides additional information which are helpful for administrating DeviceGuard.

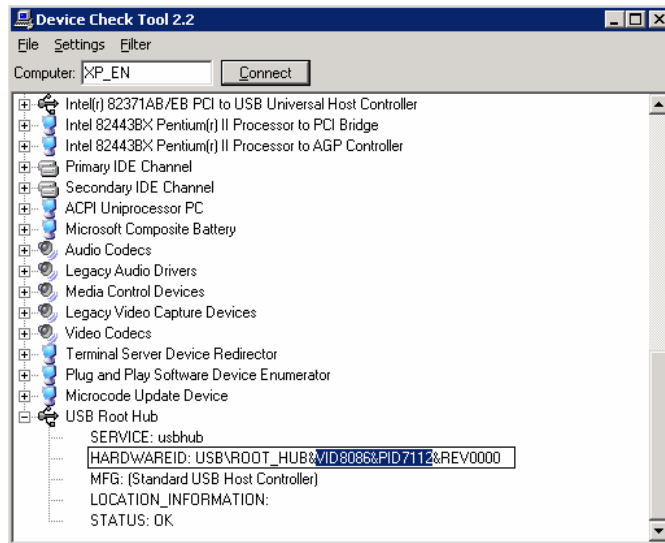


#### Filter

Choose menu item „Filter“ to reduce to certain device classes (FireWire, Infrared, USB).



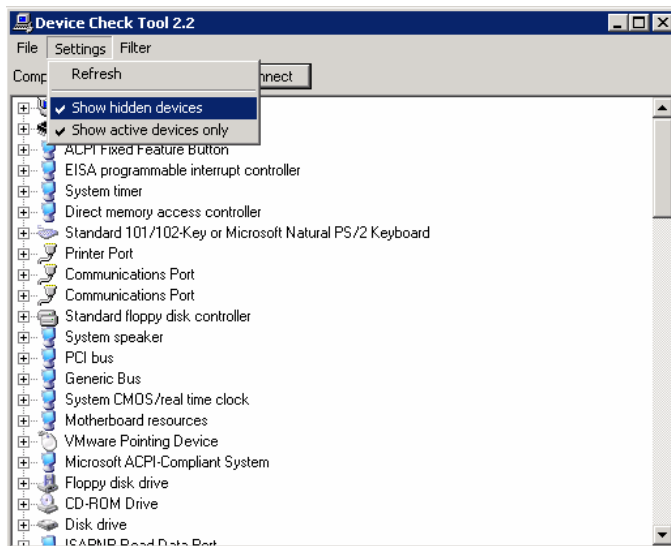
Within the shown devices further properties can be displayed. At this point e.g. a USB device VID-PID value can be determined.



## Settings

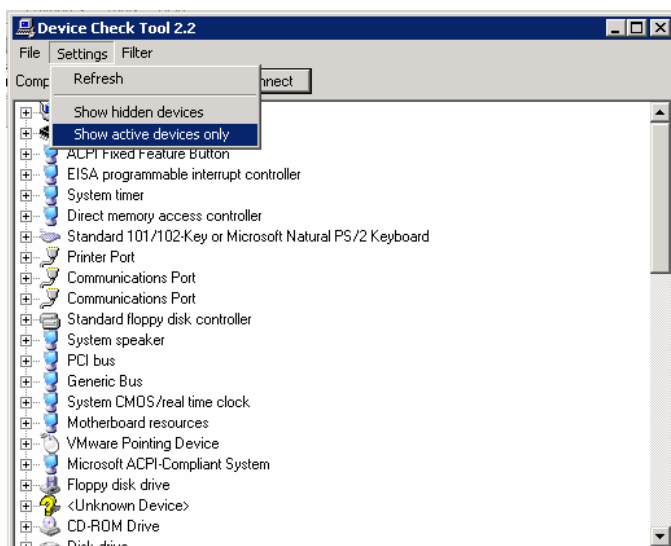
Choose menu item "Settings" to display inactive devices besides active devices. Inactive devices are devices whose drivers are installed, but the devices are not connected. Furthermore hidden devices can be displayed.

To display hidden devices choose option "Display hidden devices".



To display **inactive devices**, deactivate option "show active devices only". This function is useful to display all USB devices which were ever connected.

To display **only active devices** choose option "show active devices only".



### Connection to a remote computer

Enter computername (without \\) in field "Computer" to display all devices of a remote computer. Afterwards choose Button "Connect" or press <Enter>.

To use this function you need administrative rights. If the logged on user don't have that rights a logon dialog will be displayed.

### 3.2.5 Determine USB device properties with USBTOOL.EXE

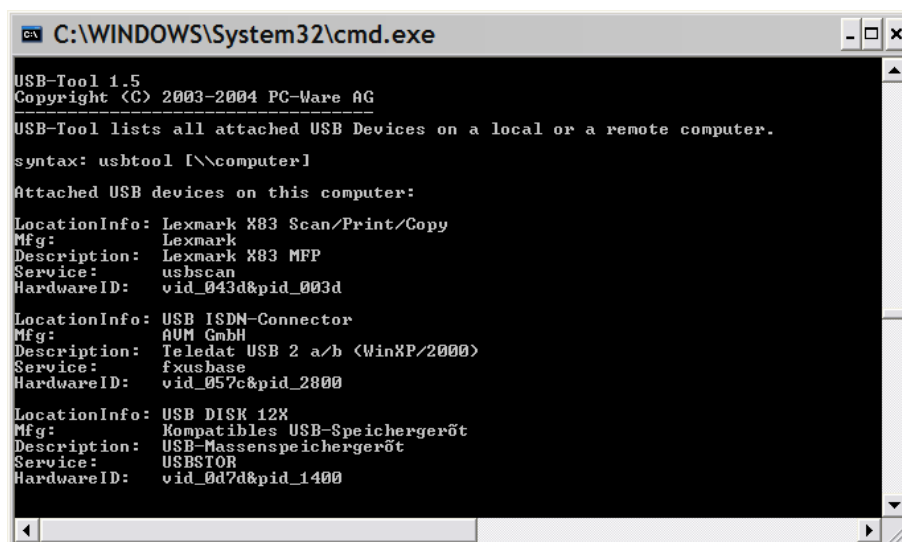
Using the *USBTOOL.EXE* tool (included in the DeviceGuard installation pack), you can easily find the relevant Registry values on a PC needed to configure DeviceGuard. The tool finds and displays the VID and PID values, the USB Service class and the descriptions for all USB devices installed on the PC.

USBTool can display USB devices of local or remote computers.

Syntax: `usbtool [\\computer]`

If USBTool is started without command line arguments USB devices connected to local computer will be displayed.

Display USB devices connected to local computer:



```
C:\WINDOWS\System32\cmd.exe
USB-Tool 1.5
Copyright (C) 2003-2004 PC-Ware AG
-----
USB-Tool lists all attached USB Devices on a local or a remote computer.
syntax: ushtool [\\computer]

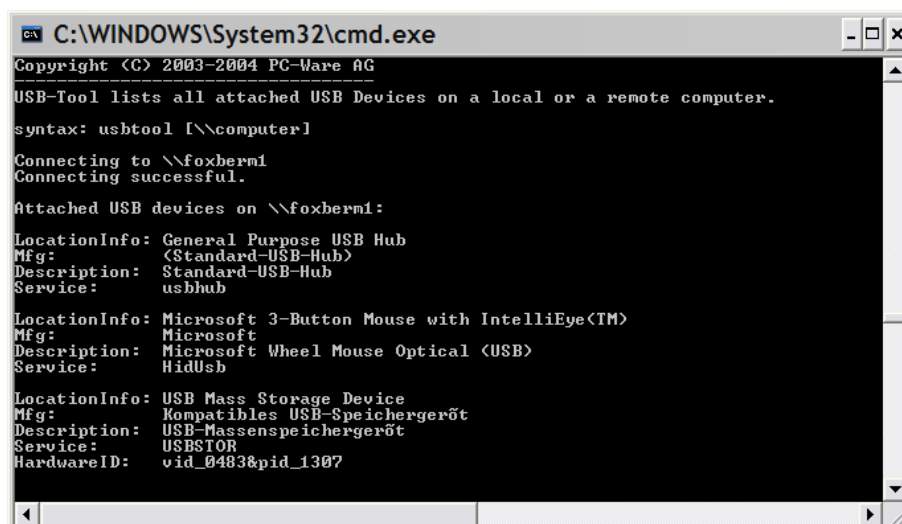
Attached USB devices on this computer:

LocationInfo: Lexmark X83 Scan/Print/Copy
Mfg: Lexmark
Description: Lexmark X83 MFP
Service: usbscan
HardwareID: vid_043d&pid_003d

LocationInfo: USB ISDN-Connector
Mfg: AUM GmbH
Description: Teledat USB 2 a/b (WinXP/2000)
Service: fxusbase
HardwareID: vid_057c&pid_2000

LocationInfo: USB DISK 12%
Mfg: Kompatibles USB-Speichergeröt
Description: USB-Massenspeichergeröt
Service: USBSTOR
HardwareID: vid_0d7d&pid_1400
```

Display USB devices connected to a remote computer:



```
C:\WINDOWS\System32\cmd.exe
Copyright (C) 2003-2004 PC-Ware AG
-----
USB-Tool lists all attached USB Devices on a local or a remote computer.
syntax: ushtool [\\computer]

Connecting to \\foxberr1
Connecting successful.

Attached USB devices on \\foxberr1:

LocationInfo: General Purpose USB Hub
Mfg: (Standard-USB-Hub)
Description: Standard-USB-Hub
Service: usbhub

LocationInfo: Microsoft 3-Button Mouse with IntelliEye(TM)
Mfg: Microsoft
Description: Microsoft Wheel Mouse Optical (USB)
Service: HidUsb

LocationInfo: USB Mass Storage Device
Mfg: Kompatibles USB-Speichergeröt
Description: USB-Massenspeichergeröt
Service: USBSTOR
HardwareID: vid_0483&pid_1307
```





### 3.3 Monitoring DeviceGuard

Make sure you have installed Microsoft .NET Framework 1.1 before using DeviceGuard Monitor.

It is recommended to start DeviceGuard Monitor from local hard disk. Microsoft .Net security policy prohibits execution of .NET code from remote computers. If DeviceGuard Monitor is started from network share or UNC path on remote computer, security policy prohibits the execution on local computer (ERROR: "System.Security.SecurityException: Request for the permission of type System.Security.Permissions.FileIOPermission").

To avoid that error it is necessary to trust the assembly in "Microsoft .NET Framework Configuration".

DeviceGuard Monitor browses the network on startup. Choose the computer to monitor. The icon color shows you the state of DeviceGuard:

-  DeviceGuard state not evaluated yet
-  DeviceGuard is not installed
-  DeviceGuard is installed, but service is not running
-  DeviceGuard is installed, service is running


In statusbar you find information about:


- cputername und operating system
- logged on user
- DeviceGuard service state

The connection to a remote computer requires administrative rights. If the logged on user doesn't have that right a logon dialog will be shown.



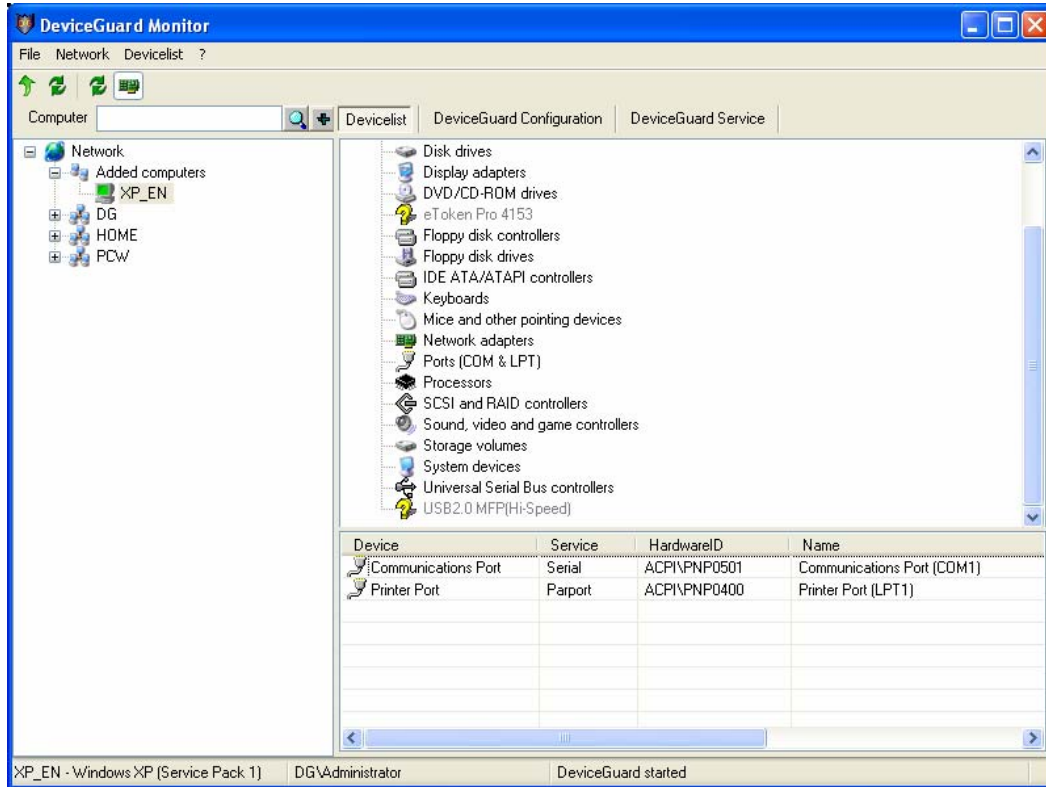
### 3.3.1 Add and seek computers

 DeviceGuard Monitor provides the functionality to directly add computers to the tree without browsing all domains or workgroups. Is the searched computer achievable in network, it will be added to list "added computers".

 With the search function you can search a computer in the network tree. If the computer is in the tree it will be marked.

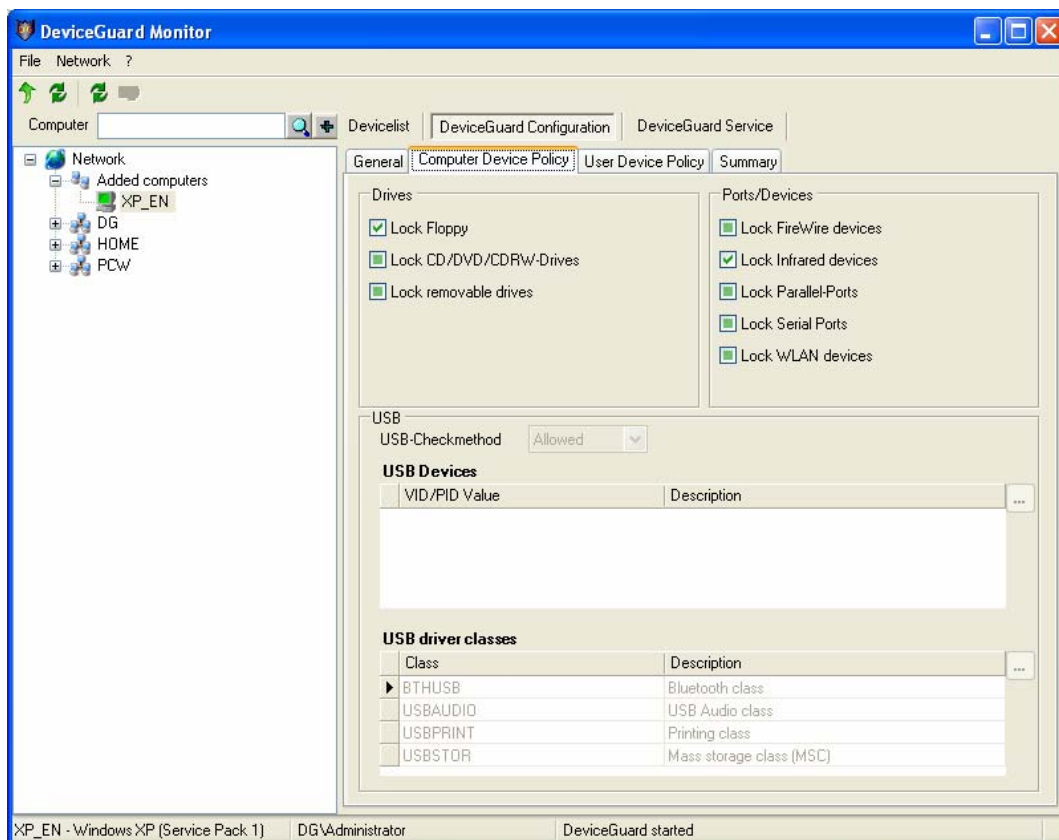
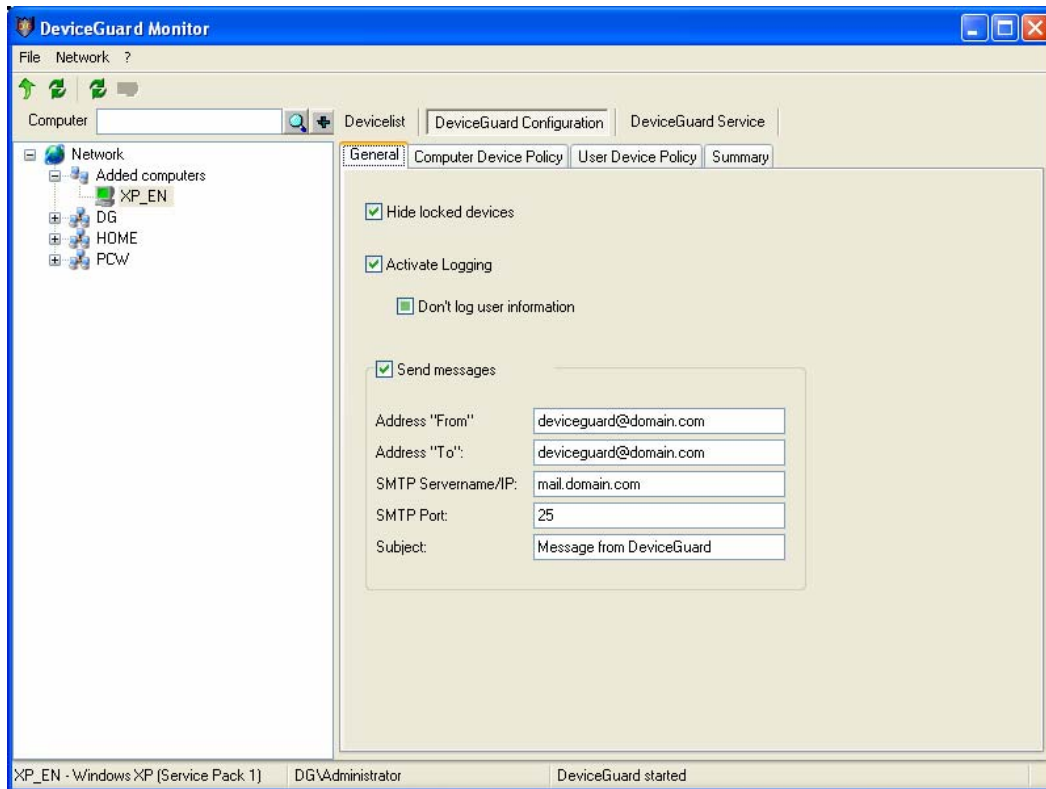
### 3.3.2 Devicelist

After connection to a computer the device list will be shown. To hide inactive devices choose menu "Devicelist". Inactive devices are installed devices which are not connected or switched off.

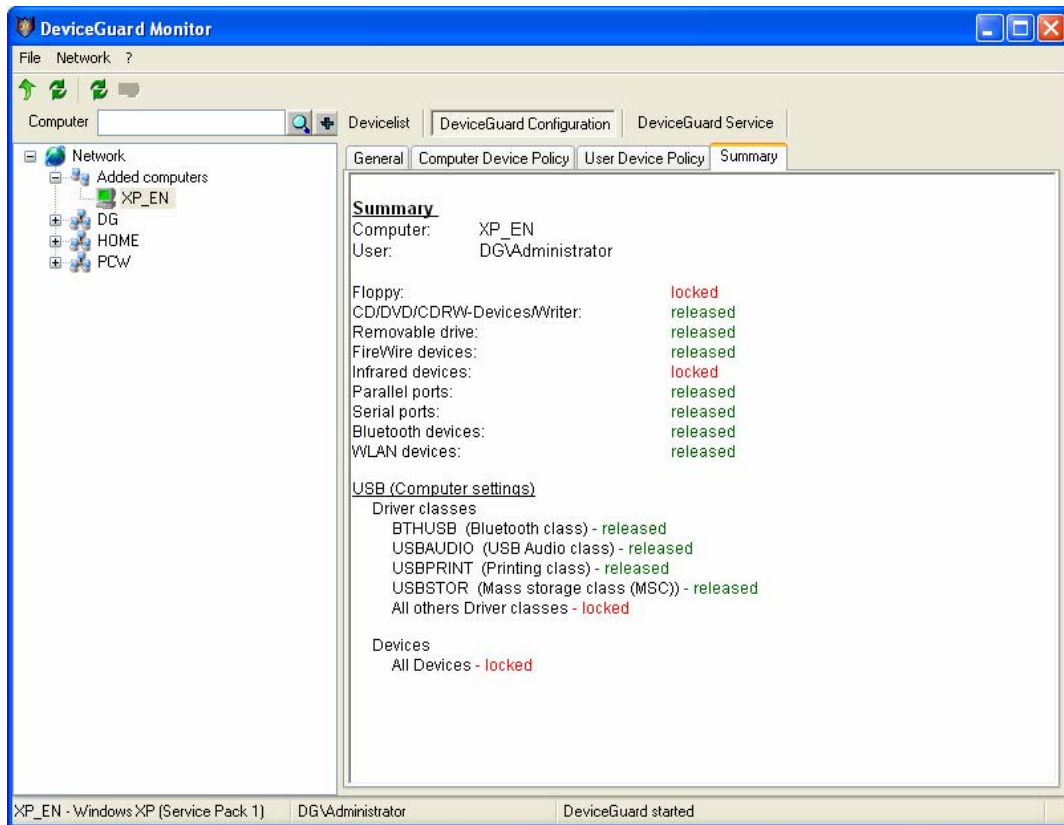


### 3.3.3 Configuration

Section "DeviceGuard Configuration" is used to display current DeviceGuard policies of the chosen computer. It is not allowed to change values here. This view allows you only to check if central configured policy is successfully applied to the computer.

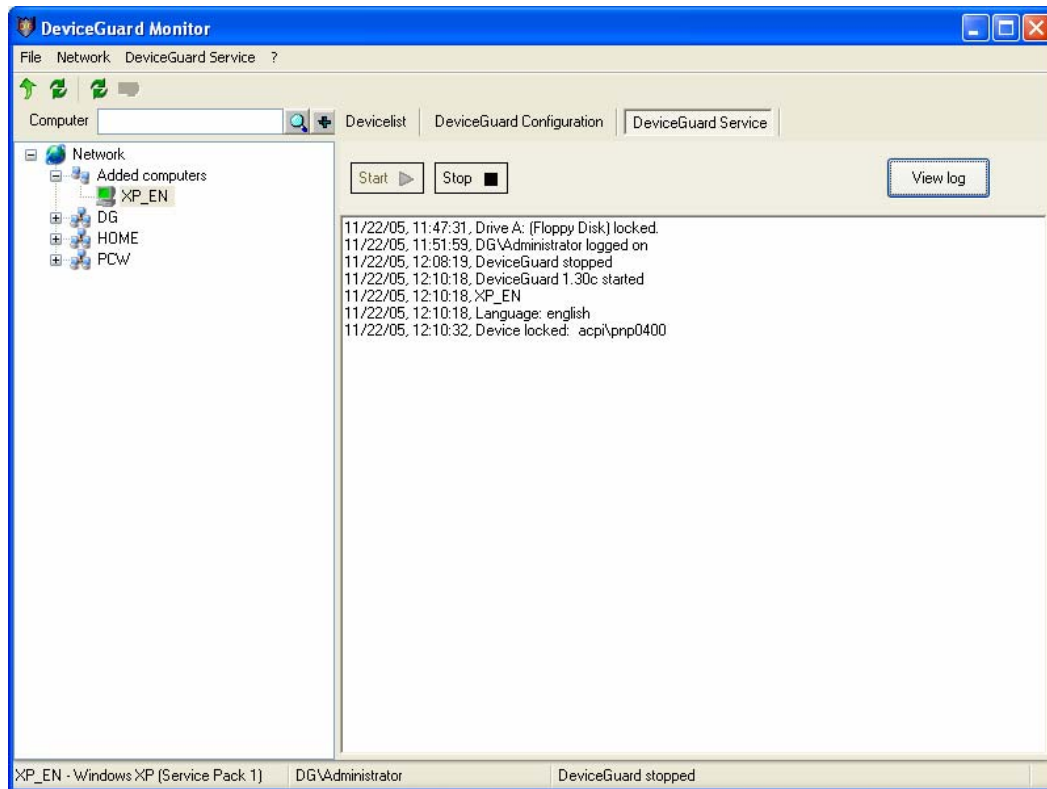


The summary is based on the computer and user policy on the chosen computer. It shows the result of both policies in a more understandable way.



### 3.3.4 Service

In Section „DeviceGuard Service“ it is possible to start or end DeviceGuard service on the chosen computer. It is also possible to view the DeviceGuard logfile.



### 3.4 Typical Implementation Scenarios

Planning the various access control scenarios is a very important part of using DeviceGuard. To do this, it is necessary to understand how the configuration works in DeviceGuard.

When you start a computer, the *DeviceGuard* service also starts. At this point, only the computer-specific configuration is available. Only when a user logs on to the computer does the user-specific configuration become active.

The computer-specific configuration is nearly always needed because certain basic settings, such as reporting, are defined in it.

To configure DeviceGuard centrally in Active Directory one or several group policies are necessary. The quantity of group policies depends on the quantity of the different configuration scenarios. To minimize the quantity of group policies it is necessary to find out the configuration scenarios in advance and plan the according group policies.

In Security groups are used to define for which computer and /or user the group policy should act.

### Scenario 1

There is no user policy. One or more computer policies on specific computers block access to specific drives and/or USB ports. Security groups in the Active Directory are used to determine which computers these policies are applied to.

### Scenario 2

A computer policy blocks access to floppy disk drives, CD drives and removable drives on all computers. Several user policies permit access to specific drives for specific users or user groups.

### Scenario 3

A computer policy controls only the basic settings in DeviceGuard. Several user policies which apply to specific users or user groups control access to specific drives and permit specific USB devices and/or USB classes.

## 3.5 Sending Messages when a Device is Locked

If necessary, DeviceGuard can send SMTP messages to a predetermined recipient whenever a DeviceGuard policy blocks a device.

Example of a message containing user information sent when a USB device is locked:

```
The device vid_0529&pid_0514 (<DeviceDescription>) is prohibited and has been
locked!
User: <DOMAINXYZ\UserY>
Computer: <PCNAME>
```

Example of a message without user information (NoUserInfo=1) sent when a drive is locked:

```
The device Drive F: (Removable Disk) is prohibited and has been locked!
Computer: <PCNAME>
```

No user information can be sent if DeviceGuard locks a device on a computer where no user has logged on.

## 4 Important Information about the Test Version

The test version of DeviceGuard has all of the functionality of the full version but can be used for a limited time only. DeviceGuard stops working when the trial period has expired.

## 5 Annex

### 5.1 The DeviceGuard.adm Policy Template

```
;; DeviceGuard 1.30c ;;;;
;;;;;;;;;;;;;;;;;;;;;;;;
CLASS MACHINE
;;;;;;;;;;;;;;;;;;;;;;;;

CATEGORY "DeviceGuard"
KEYNAME "Software\Policies\PC-Ware\DeviceGuard"

;--- Drive Settings -----
POLICY "Lock floppy drives"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock floppy drives." TEXT END PART
    PART "disabled: Unlock floppy drives." TEXT END PART
    VALUENAME "LockFloppy"
    VALUEON NUMERIC 1
    VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock CD/DVD drives"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock CD/DVD drives." TEXT END PART
    PART "disabled: Unlock CD/DVD drives." TEXT END PART
    VALUENAME "LockCD"
    VALUEON NUMERIC 1
    VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock removable drives"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock removable drives." TEXT END PART
    PART "disabled: Unlock removable drives." TEXT END PART
    VALUENAME "LockRemovable"
    VALUEON NUMERIC 1
    VALUEOFF NUMERIC 0
END POLICY

;--- Port Settings -----
POLICY "Lock FireWire port (IEEE 1394)"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock FireWire ports." TEXT END PART
    PART "disabled: Unlock FireWire ports." TEXT END PART
    VALUENAME "Lock1394"
    VALUEON NUMERIC 1
    VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock Infrared port"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock Infrared ports." TEXT END PART
    PART "disabled: Unlock Infrared ports." TEXT END PART
    VALUENAME "LockInfrared"
    VALUEON NUMERIC 1
    VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock Parallel port"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock Parallel ports." TEXT END PART
    PART "disabled: Unlock Parallel ports." TEXT END PART
    VALUENAME "LockParallel"
    VALUEON NUMERIC 1
    VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock Serial port"
    PART "not configured: Policy not applied." TEXT END PART
    PART "enabled: Lock Serial ports." TEXT END PART
    PART "disabled: Unlock Serial ports." TEXT END PART
    VALUENAME "LockSerial"
    VALUEON NUMERIC 1
```



```
POLICY "Lock removable drives"
  PART "not configured: Policy not applied." TEXT END PART
  PART "enabled: Lock removable drives." TEXT END PART
  PART "disabled: Unlock removable drives." TEXT END PART
  VALUENAME "LockRemovable"
  VALUEON NUMERIC 1
  VALUEOFF NUMERIC 0
END POLICY

;--- Port Settings -----
POLICY "Lock FireWire port (IEEE 1394)"
  PART "not configured: Policy not applied." TEXT END PART
  PART "enabled: Lock FireWire ports." TEXT END PART
  PART "disabled: Unlock FireWire ports." TEXT END PART
  VALUENAME "Lock1394"
  VALUEON NUMERIC 1
  VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock Infrared port"
  PART "not configured: Policy not applied." TEXT END PART
  PART "enabled: Lock Infrared ports." TEXT END PART
  PART "disabled: Unlock Infrared ports." TEXT END PART
  VALUENAME "LockInfrared"
  VALUEON NUMERIC 1
  VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock Parallel port"
  PART "not configured: Policy not applied." TEXT END PART
  PART "enabled: Lock Parallel ports." TEXT END PART
  PART "disabled: Unlock Parallel ports." TEXT END PART
  VALUENAME "LockParallel"
  VALUEON NUMERIC 1
  VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock Serial port"
  PART "not configured: Policy not applied." TEXT END PART
  PART "enabled: Lock Serial ports." TEXT END PART
  PART "disabled: Unlock Serial ports." TEXT END PART
  VALUENAME "LockSerial"
  VALUEON NUMERIC 1
  VALUEOFF NUMERIC 0
END POLICY

POLICY "Lock WLAN (WIFI) devices"
  PART "not configured: Policy not applied." TEXT END PART
  PART "enabled: Lock WLAN (WIFI) devices." TEXT END PART
  PART "disabled: Unlock WLAN (WIFI) devices." TEXT END PART
  VALUENAME "LockWIFI"
  VALUEON NUMERIC 1
  VALUEOFF NUMERIC 0
END POLICY

;--- USB Settings -----
POLICY "USB Settings"
  KEYNAME "Software\Policies\PC-Ware\DeviceGuard"
  #if VERSION >= 3
    EXPLAIN !!HelpUSB
  #endif
  PART "USB check method:" DROPDOWNLIST VALUENAME "CheckUSB"
    ITEMLIST
      NAME "allow device (see list)" VALUE NUMERIC 1 DEFAULT
      NAME "lock device (see list)" VALUE NUMERIC 2
    END ITEMLIST
  END PART
  PART "USB device:" LISTBOX EXPLICITVALUE
    KEYNAME "Software\Policies\PC-Ware\DeviceGuard\USB"
  END PART
  PART "USB classes:" LISTBOX EXPLICITVALUE
    KEYNAME "Software\Policies\PC-Ware\DeviceGuard\USBClasses"
  END PART
END POLICY

END CATEGORY
```

```
[strings]
HelpMachine="DeviceGuard: General Settings\n\nConfigure DeviceGuard and computer-specific
drive access control."
HelpUSB="DeviceGuard: USB-Settings\n\nUSBCheck:\nMethods which are used to control access to
USB devices.\n\nList of USB Devices:\nList with VID and PID values for USB devices to which
access is to be controlled.\n\nList of USB Classes:\nList of USB classes which are to be
locked or unlocked depending on the selected access control method."
```

## 5.2 VID List (Revision: April 2005)

See: [www.usb.org/developers/tools](http://www.usb.org/developers/tools)

Vendor-ID (hex), Vendor	Vendor-ID (hex), Vendor	Vendor-ID (hex), Vendor	
vid_03eb	Atmel Corporation	vid_1549	Beamex Oy Ab
vid_03ee	Mitsumi	vid_154a	ID Innovations Incorporated
vid_03f0	Hewlett Packard	vid_154b	PNY Technologies Inc.
vid_03f2	Oak Technology, Inc	vid_154c	AutoXray Inc.
vid_03f3	Adaptec, Inc.	vid_154d	CONNECTCOUNTRY SDN BHD
vid_03f4	Diebold, Inc.	vid_154e	D & M Holdings, Inc.
vid_03f9	KeyTronic Corp.	vid_154f	Shandong New Beiyang Information Technology Co., Ltd.
vid_03fc	Elitegroup Computer Systems	vid_1550	Cardinal Health, Inc.
vid_0400	National Semiconductor	vid_1551	SAIC/IISBU
vid_0402	Ali Corporation	vid_1552	DALLAB (M) SDN BHD (587734-A)
vid_0403	Future Technology Devices International Limited	vid_1553	Raytheon Commercial Infrared
vid_0409	NEC Corporation	vid_1554	Prolink Microsystems Corporation
vid_040a	Kodak Co.	vid_1555	OWEN Ltd.
vid_040b	Weltrend Semiconductor	vid_1556	CERN
vid_040d	VIA Technologies, Inc.	vid_1557	QQO
vid_040e	MCCI	vid_1558	Microbus Designs Ltd.
vid_0411	BUFFALO INC.	vid_1559	The Toro Company
vid_0416	Winbond Electronics Corp.	vid_155a	ELDAT GmbH
vid_041a	Phoenix Technologies Ltd.	vid_155b	Shanghai Huahong Integrated Circuit Co., Ltd.
vid_041e	Creative Labs	vid_155c	Meyers Technology
vid_0421	Nokia Corporation	vid_155d	National Rejectors, Inc. GmbH
vid_0423	CATC	vid_155e	DUPLO SEIKO CORPORATION
vid_0424	SMSC	vid_155f	Cobra Electronics Corporation
vid_0425	Freescale Semiconductor Hong Kong Limited	vid_1560	Supra a Div. of GE Security
vid_0429	Cirrus Logic Inc.	vid_1561	LaunchPadOffice Inc.
vid_042c	Innovative Semiconductors, Inc.	vid_1562	Infowize Technologies Corporation
vid_042f	Molex Inc.	vid_1563	Micronet Corporation
vid_0432	Unisys Corp.	vid_1564	Gizmondo Europe Ltd.
vid_0438	Advanced Micro Devices	vid_1565	Advance Modules
vid_043d	Lexmark International Inc.	vid_1566	WIN ACCORD LTD.
vid_043e	LG Electronics USA Inc.	vid_1567	MUTOH Industries Ltd.
vid_0440	EIZO NANA0 CORPORATION	vid_1568	Sunf Pu Technology Co., Ltd
vid_0443	Gateway 2000	vid_1569	Mad City Labs, Inc.
vid_0446	NMB Technologies Corporation	vid_156a	Logical Solutions, Inc.
vid_044e	Alps Electric Co., Ltd.	vid_156b	Cairn Research Ltd.
vid_0451	Texas Instruments	vid_156c	Meade Instruments Corp.
vid_0457	Silicon Integrated Systems Corp.	vid_156d	OMICRON electronics GmbH
vid_0458	KYE Systems Corp. (Mouse Systems)	vid_156e	MVox Electronics
vid_045b	Renesas Technology Corp.	vid_156f	Quantum Corporation
vid_045e	Microsoft Corporation	vid_1570	ALLTOP TECHNOLOGY CO., LTD.
vid_0461	Primax Electronics	vid_1571	NIKON-TRIMBLE CO., LTD.
vid_0463	MGE UPS SYSTEMS	vid_1572	Ricreations, Inc.
vid_046b	American Megatrends	vid_1573	Gradiente Electronica S.A.
vid_046d	Logitech Inc.	vid_1574	HKW-Elektronik GmbH
vid_046e	Behavior Tech. Computer Corporation	vid_1575	Video Associates Labs, Inc.
vid_0471	Philips	vid_1576	Maretron
vid_0472	Sun Microsystems	vid_1577	MIYUKI ELEX CO., LTD.
vid_0474	Sanyo Electric Co. Ltd.	vid_1578	Beijing Huaqi Information Digital Technology Co., Ltd.
vid_0477	Seagate Technology	vid_1579	Reputed Industrial Company Limited
vid_047a	Semtech Corporation	vid_157a	Lowrance Electronics, Inc.
vid_047e	Agere Systems Inc.	vid_157b	Ketron SRL
vid_0482	Kyocera Corporation	vid_157d	Tokyo Sokuteikizai Co., Ltd.
vid_0483	STMicroelectronics	vid_157e	U-MEDIA Communications, Inc.
vid_0489	Foxconn / Hon Hai	vid_157f	Levon Limited
vid_048d	ITE Tech. Inc.	vid_1580	Real Time Logic, Inc.
vid_0dbf	Jess-Link International		
vid_0dc0	Great Notions		
vid_0dc3	Athena Smartcard Solutions Inc.		
vid_0dc4	Macpower & Tytyech Technology Co., LTD.		
vid_0dc5	SDK Co, Ltd.		
vid_0dd1	Contek Electronics Co., Ltd.		
vid_0dd2	Power Quotient International Co., Ltd.		
vid_0dd3	MediaQ		
vid_0dd4	Custom Engineering SPA		
vid_0dda	Integrated Circuit Solution Inc.		
vid_0ddd	Datelink Technology Co., Ltd.		
vid_0de0	BD Consumer Healthcare		
vid_0dea	UTECH Electronic (D.G.) Co., Ltd.		
vid_0def	Full Rise Electronic Co., Ltd.		
vid_0df6	Sitecom Europe B.V.		
vid_0df7	Mobile Action Technology Inc.		
vid_0df8	Hoya Computer Co., Ltd.		
vid_0dfa	Toyo Communication Equipment Co., Ltd.		
vid_0e02	Doowon Co., LTD		
vid_0e14	Hunter Engineering Co.		
vid_0e22	Symbian Ltd.		
vid_0e23	Liou Yuane Enterprise Co., Ltd.		
vid_0e25	VinChip Systems Inc.		
vid_0e26	J-Phone East Co., Ltd.		
vid_0e34	Micro Computer Control Corp.		
vid_0e38	Stratitec, Inc.		
vid_0e39	Smart Modular Technologies, Inc.		
vid_0e3a	Neostar Technology Co., Ltd.		
vid_0e42	Puretek Industrial Co., Ltd.		
vid_0e44	Sun-Riseful Technology Co., Ltd.		
vid_0e46	Delphi Corporation		
vid_0e55	Speed Dragon Multimedia Ltd.		
vid_0e5a	ACTIVE CO., LTD.		
vid_0e5b	Union Power Information Industrial Co., Ltd.		
vid_0e5c	Bitland Information Technology Co., Ltd.		
vid_0e67	Fossil		
vid_0e82	Ching Tai Electric Wire & Cable Co., Ltd.		
vid_0e83	Shin An Wire & Cable Co.		
vid_0e8b	KAO SHIN PRECISION INDUSTRY CO., LTD.		
vid_0e8c	Well Force Electronic Co., Ltd		
vid_0e8d	MediaTek Inc.		
vid_0e92	C'S GLORY ENTERPRISE CO., LTD.		
vid_0e96	APLUX Communications Ltd.		
vid_0ea0	Ours Technology Inc.		
vid_0ea6	Nihon Computer Co., Ltd.		
vid_0ea7	MSL Enterprises Corp.		
vid_0eb1	WIS Technologies, Inc.		
vid_0ebf	Omega Technology of Taiwan Inc.		
vid_0ec2	Sweetray Industrial Ltd.		
vid_0ec3	AXELL CO., LTD.		
vid_0ec6	InnoVISION Multimedia Limited		
vid_0ecd	Lite-On IT Corp.		
vid_0ece	TaiSol Electronics Co., Ltd.		
vid_0eda	NORITAKE ITRON CORPORATION		

vid_0492	Samsung Semiconductor, Inc.	vid_0ef2	I/OMAGIC CORPORATION	vid_1581	IGB Communication Co., Ltd.
vid_0499	Yamaha Corporation	vid_0ef3	Lynn Products, Inc.	vid_1582	Asia Pacific Microsystems, Inc.
vid_04a4	Hitachi, Ltd.	vid_0ef5	PointChips	vid_1583	EUCHNER GmbH & Co. KG
vid_04a5	Benq Corporation	vid_0efd	Oasis Semiconductor	vid_1584	Prueftechnik AG
vid_04a7	Visioneer	vid_0efe	WEM TECHNOLOGY INC.	vid_1585	IKeyInfinity Inc.
vid_04a9	Canon Inc.	vid_0f06	Visual Frontier Precision Corp.	vid_1586	Shenzhen Shi Viton Technology City Co., Ltd.
vid_04b0	Nikon Corporation	vid_0f08	CSL Wire & Plug (Shen Zhen)	vid_1587	SMA Regelsysteme GmbH
vid_04b1	Pan International	vid_0f0e	Energy Full Corp.	vid_1588	Fine Instruments Corporation
vid_04b3	IBM Corporation	vid_9696	Digital Arts, Inc.	vid_1589	Arcus Technology Inc.
vid_04b4	Cypress Semiconductor	vid_9710	Moschip Semiconductor Technology	vid_158a	BOBE Industrie-Elektronik
vid_04b5	ROHM Co., Ltd.	vid_0f1c	Funai Electric Co., Ltd.	vid_158b	Righttag Inc.
vid_04b7	Compal Electronics, Inc.	vid_0f22	SENIOR INDUSTRIES, INC.	vid_158c	LINFOS CO., LTD.
vid_04b8	Seiko Epson Corp.	vid_0f24	FLEX-P INDUSTRIES SDN.BHD.	vid_158d	Oakley Inc.
vid_04bb	I-O Data Device, Inc.	vid_0f2e	Geniality Maple Technology Co., Ltd.	vid_158e	Acterna Germany GmbH
vid_04bf	TDK Corporation	vid_0f32	YFC-BonEagle Electric Co., Ltd.	vid_158f	Tai Yip Electrical Co., Ltd.
vid_04c5	Fujitsu Ltd.	vid_0f38	Nien-Yi Industrial Corp.	vid_1590	Onsu Data Telecommunication Technology (Shenzhen) Fty.
vid_04c8	Konica Corporation	vid_0f42	Nital Consulting Services, Inc.	vid_1591	Advanced Product Design & Mfg. Inc.
vid_04ca	Lite-On Technology Corp.	vid_0f4c	WORLDWIDE CABLE OPTO CORP.	vid_1592	Tokyo Drawing Ltd.
vid_04cb	Fuji Photo Film Co., Ltd.	vid_0f52	WING KEI ELECTRICAL CO., LTD.	vid_1593	Vector International bvba
vid_04cc	Philips Semiconductors	vid_0f53	Taiyo Cable (Dongguan) Co. Ltd.	vid_1594	Lockheed Martin Missiles & Fire Control
vid_04cf	Myson Century, Inc.	vid_0f54	Kawai Musical Instruments Mfg. Co., Ltd.	vid_1595	Flexiworld Technologies, Inc.
vid_04d4	LSI Logic Inc.	vid_0f5d	NewAge International, LLC	vid_1596	Kilodyne LLC
vid_04d6	Mentor Graphics	vid_0f5f	Key Technology Corporation	vid_1597	KCodes Corporation
vid_04d9	Holtek Semiconductor, Inc.	vid_0f60	NTK (HK) LTD.	vid_1598	Kunshan Guojie Electronics Co., Ltd.
vid_04da	Panasonic (Matsushita)	vid_0f62	Acrox Technologies Co., Ltd.	vid_1599	ANRITSU METER CO., LTD.
vid_04dc	Huan Hsin Holdings Ltd.	vid_0f68	TEPCO UQUEST, LTD.	vid_159a	SkuTek Instrumentation
vid_04dd	Sharp Corporation	vid_0f69	DIONEX CORPORATION	vid_159b	Zitite Corporation
vid_04df	Interlink Electronics	vid_0f7e	Fluke	vid_159c	Binary Acoustic Technology
vid_04e1	Iiyama Corporation	vid_0f88	VTech Holdings Ltd.	vid_159d	Boone Cable Works & Electronics
vid_04e6	SCM Microsystems	vid_0f8b	Yazaki Corporation	vid_159e	SmartSwing, Inc.
vid_04e7	Elo TouchSystems	vid_0f8c	Young Generation International Corp.	vid_159f	Beijer Electronics AB
vid_04e8	Samsung Electronics Co., Ltd.	vid_0f8d	Unwill Computer Corp.	vid_15a0	Zarlink Semiconductor
vid_04eb	Northstar Systems, Inc.	vid_0f8f	SOMA NETWORKS	vid_15a1	Nicety Technologies Inc.
vid_04ec	Tokyo Electron Device Limited	vid_0f97	CviLux Corporation	vid_15a2	Freescale Semiconductor
vid_04f1	Victor Company of Japan, Limited	vid_0f98	CYBERBANK CORP.	vid_15a3	Larson Davis, Inc.
vid_04f2	Chicony Electronics Co., Ltd.	vid_0fa4	ATL Technology	vid_15a4	Afa Technologies, Inc.
vid_04f3	Elan Microelectronics Corporation	vid_0fa5	SOTEC CO., LTD.	vid_15a5	CIT Engineering NV
vid_04f7	Newnex Technology Corp.	vid_0faf	Winpoint Electronic Corp.	vid_15a6	Unicos Corporation
vid_04f9	Brother Industries, Ltd.	vid_0fb0	Haurtian Wire & Cable Co., Ltd.	vid_15a7	APPSware Wireless LLC dba Apriva
vid_04fc	SUNPLUS TECHNOLOGY CO., LTD.	vid_0fb2	Conteck Co., Ltd.	vid_15a8	Teams Power Limited
vid_04fe	PFU Limited	vid_0fb8	Wistron Corporation	vid_15a9	Gemtek Technology Co.,Ltd.
vid_0501	Fujikura/DDK	vid_0fba	SAN SHING ELECTRONICS CO., LTD.	vid_15aa	Gearway Electronics (Dong Guan) Co., Ltd.
vid_0507	Hosiden Corporation	vid_0fc6	Dataplus Supplies, Inc.	vid_15ab	Virgin Electronics, LLC
vid_050d	Belkin Components	vid_0fce	Sony Ericsson Mobile Communications AB	vid_15ac	Smartware
vid_0514	FCI Electronics	vid_0fd0	2L international B.V.	vid_15ad	Bleile Datentechnik GmbH
vid_0516	Longwell Electronics/Longwell Company	vid_0fd5	Direct Access Technology, Inc.	vid_15ae	KAYSER-THREDE GMBH
vid_0519	Star Micronics Co., LTD	vid_0fe5	GREENCONN (U.S.A.) INC.	vid_15af	Jenaer Antriebstechnik GmbH
vid_051d	American Power Conversion	vid_0fed	ACCESS CO., LTD.	vid_15b0	Pacific Instruments, Inc.
vid_051e	Scientific Atlanta, Inc.	vid_0ff7	CHL SHING COMPUTER ACCESSORIES CO., LTD.	vid_15b1	MITAC Technology Corporation
vid_0520	Taiwan Semiconductor Manufacturing Co.	vid_1000	Speed Tech Corp.	vid_15b2	Audio Dev AB
vid_0522	ACON, Advanced-Connectek, Inc.	vid_1001	Ritronics Components (S) Pte. Ltd.	vid_15b3	GL Sciences Inc.
vid_0525	PLX Technology, Inc.	vid_1004	LG Electronics Inc.	vid_15b4	Orient Power Multimedia Ltd.
vid_0528	ATI Technologies, Inc.	vid_1005	Apacer Technology Inc.	vid_15b5	ANUBIS ELECTRONIC GmbH
vid_052b	Tekom Technologies, Inc	vid_100d	NETOPIA, INC.	vid_15b6	Dialog Semiconductor GmbH
vid_052c	Canon Development Americas	vid_1010	FUKUDA DENSHI CO., LTD.	vid_15b7	Hyper Stimulator International Pty Ltd.
vid_0531	Wacom Technology Corp.	vid_1012	SDKM Fibres, Wires & Cables Berhad	vid_15b8	Serome Electronics, Inc.
vid_0537	Inventec Corporation	vid_1015	Softronics Pty. Ltd.	vid_15b9	USD Corporation
vid_0539	Shyh Shiun Terminals Co. LTD	vid_1017	SPEEDY INDUSTRIAL SUPPLIES PTE. LTD.	vid_15ba	Olimex Ltd.
vid_053a	Preh Werke GmbH & Co. KG	vid_1022	Shinko Shoji Co., Ltd.	vid_15bb	CopyPro, Inc.
vid_053f	Synopsys, Inc.	vid_1026	Newly Corporation	vid_15bc	Daktronics Inc.
vid_0543	ViewSonic Corporation	vid_102a	RAMOS Technology Co., Ltd.	vid_15bd	Sigmaelectronics Co., Ltd.
vid_0545	Veo	vid_102b	Infotronic America, Inc.	vid_15be	EssNet Interactive AB
vid_054c	Sony Corporation	vid_102c	Etoms Electronics Corp.	vid_15bf	ESA, Inc.
vid_0550	Fuji Xerox Co., Ltd.	vid_102d	Winic Corporation	vid_15c0	CJM
vid_0553	STMicroelectronics Imaging Division	vid_1031	Comax Technology Inc.	vid_15c1	Amirix Systems Inc.
vid_0556	Asahi Kasei Microsystems Co., Ltd.	vid_1032	C-One Technology Corp.	vid_15c2	SoundGraph, Inc.
vid_0557	ATEN International Co. Ltd.	vid_1033	Nucam Corporation	vid_15c3	m.u.t - GmbH
vid_0564	Kodak Digital Product Center, Japan Ltd.	vid_104c	AMCO TEC International Inc.	vid_15c4	Global Marketing Alliance, Inc.
vid_0567	Xyratex			vid_15c5	Pressure Profile Systems, Inc.
vid_056a	WACOM Co., Ltd.			vid_15c6	Laboratoires MXM
vid_056e	Elecom Co., Ltd.				

vid_0572	Conexant Systems, Inc.	vid_1056	Hsin Chen Ent Co., Ltd.	vid_15c7	IRI-Ubiteq, Inc.
vid_0573	Zoran Corporation	vid_1058	Western Digital Technologies, Inc.	vid_15c8	KTF Technologies
vid_0576	BAFO/Quality Computer Accessories	vid_1059	Giesecke & Devrient GmbH	vid_15c9	D-Box Technologies
vid_057b	Y-E Data, Inc.	vid_105d	Delkin Devices, Inc.	vid_15ca	TEXTECH INTERNATIONAL LTD.
vid_057c	AVM GmbH	vid_105e	Valence Semiconductor Design Limited	vid_15cb	Activis Polska
vid_0582	Roland Corporation	vid_105f	Chin Shong Enterprise Co., Ltd.	vid_15cc	GL Communications Inc.
vid_0583	Padix Co., Ltd.	vid_1060	Easthome Industrial Co., Ltd.	vid_15cd	DeFelsko Corporation
vid_0584	RATOC System Inc.	vid_106a	Loyal Legend Limited	vid_15ce	Oriental R&D Co., Ltd.
vid_058b	Infineon Technologies	vid_106e	ConectL	vid_15cf	AVTOR Ltd..
vid_058d	Micrel Semiconductor	vid_106f	Money Controls	vid_15d0	AIRSTAR Inc.
vid_058f	Alcor Micro, Corp.	vid_1076	GCT Semiconductor, Inc.	vid_15d1	Hokuyo Automatic Co., Ltd.
vid_0590	OMRON Corporation	vid_1083	CANON ELECTRONICS INC.	vid_15d2	REA Elektronik GmbH
vid_0598	Niigata Canotec Co., Inc.	vid_1084	PANTECH CO., LTD.	vid_15d3	Symmetric Research
vid_059b	Iomega Corporation	vid_108b	Grand-tek Technology Co., Ltd.	vid_15d4	Opinionmeter International, Ltd.
vid_059f	LaCie	vid_108c	Robert Bosch GmbH	vid_15d5	Coulomb Electronics Ltd.
vid_05a2	Fuji Film Microdevices Co. Ltd.	vid_1090	Wuhan Tianyu Information Industry Co., Ltd.	vid_15d6	Fitness Expert
vid_05a3	TransDimension-NH LLC	vid_109f	eSOL Co., Ltd.	vid_15d7	amaxa GmbH
vid_05a4	Ortek Technology, Inc.	vid_10a0	HIROTECH, INC.	vid_15d8	Grundig Business Systems GmbH
vid_05a7	Bose Corporation	vid_10a3	mitsubishi materials corporation	vid_15d9	Apexone Microelectronics Inc.
vid_05a9	OmniVision Technologies, Inc.	vid_10a9	SK Teletech Co., Ltd.	vid_15da	Cooper - Atkins Corporation
vid_05ac	Apple Computer	vid_10ab	USI Co., Ltd.	vid_15db	Phillip Harris Education
vid_05ad	Y.C. Cable U.S.A., Inc	vid_10ae	Princeton Technology Corp.	vid_15dc	Hynix Semiconductor Inc.
vid_3923	National Instruments	vid_10c4	Silicon Laboratories, Inc.	vid_15dd	Axona Limited
vid_05ba	DigitalPersona, Inc.	vid_10c5	Sanei Electric Inc.	vid_15de	Spatial Freedom, Inc.
vid_05bd	RAFI GmbH & Co. KG	vid_10c6	Intec, Inc.	vid_15df	Helmut Fischer GmbH + Co. KG
vid_05be	Tyco Electronics	vid_10cd	Kycon Inc.	vid_15e0	Seong Ji Industrial Co., Ltd.
vid_05c1	Kawasaki Microelectronics, Inc.	vid_10d6	Actions Semiconductor Co., Ltd.	vid_15e1	RSA Security Inc.
vid_05c6	Qualcomm, Inc	vid_10df	In-Win Development Inc.	vid_15e2	Bionopoly LLC
vid_05c8	Foxlink/Cheng Uei Precision Industry Co., Ltd.	vid_10ec	Vast Technologies Inc.	vid_15e3	NEURICAM SPA
vid_05ca	Ricoh Company Ltd.	vid_110a	MOXA Technologies Co., Ltd.	vid_15e4	Numark Industries
vid_05ce	sci-worx GmbH	vid_111e	VSO Electric Co., Ltd.	vid_15e5	Micro Systems Inc.
vid_05d9	TPG IPB, Inc.	vid_112e	Master Hill Electric Wire and Cable Co., Ltd.	vid_15e6	Turnkey Ltd.
vid_05da	Microtek International Inc.	vid_1131	Integrated System Solution Corp.	vid_15e7	Media Systems Ltd.
vid_05dc	Lexar Media, Inc.	vid_113c	Arin Tech Co., Ltd.	vid_15e8	Micro Tools Inc.
vid_05dd	Delta Electronics Inc.	vid_113d	Mapower Electronics Co. Ltd.	vid_15e9	Pacific Digital Corp.
vid_05e0	Symbol Technologies	vid_113f	Testech, inc.	vid_15ea	C-guys Inc.
vid_05e1	Syntek Semiconductor Co., Ltd.	vid_1141	V ONE MULTIMEDIA PTE LTD	vid_15eb	VIA Telecom
vid_05e3	Genesys Logic, Inc.	vid_1147	Ever Great Electric Wire and Cable Co., Ltd.	vid_15ec	Belcarra Technologies Corp.
vid_05e5	Fuji Electric FA Components & Systems Co., Ltd.	vid_114d	Alpha Imaging Technology Corp.	vid_15ed	UCA Technology Inc.
vid_05e9	Kawasaki LSI	vid_1162	Secugen Corporation	vid_15ee	Quorum Communications, Inc.
vid_05f0	Canopus Co., Ltd.	vid_1163	DeLorme Publishing Inc.	vid_15ef	MSilicon Electronics, Inc.
vid_05f5	Unixtar Technology Inc.	vid_1164	YUAN High-Tech Development Co., Ltd.	vid_15f0	Technex Lab Co., Ltd.
vid_05fe	CHIC TECHNOLOGY CORP	vid_1168	BizConn International Corp.	vid_15f1	Mortara Instrument, Inc.
vid_05ff	LeCroy Corporation	vid_116e	Gigastorage Corp.	vid_15f2	Chyron Corp.
vid_0603	Novatek Microelectronics Corp.	vid_116f	Silicon 10 Technology Corp.	vid_15f3	AquaCube Inc.
vid_0609	SMK Manufacturing Inc.	vid_1175	Shengyih Steel Mold Co., Ltd.	vid_15f4	Computer & Entertainment, Inc.
vid_060f	Joinsoon Electronics Mfg. Co., Ltd.	vid_1189	Trisat Industrial Co., Ltd.	vid_15f5	Mobitek Communication Corp.
vid_0611	Totoku Electric Co., LTD.	vid_1191	Loyalty Founder Enterprise Co., Ltd.	vid_15f6	ASICS World Services Ltd.
vid_0613	TransAct Technologies Incorporated	vid_1197	Technomagia Co., Ltd.	vid_15f7	HANTEL CO., LTD.
vid_0614	Bio-Rad Laboratories	vid_1198	StarShine Technology Corp.	vid_15f8	Vianet, Inc.
vid_0619	Seiko Instruments Inc.	vid_1199	Sierra Wireless Inc.	vid_15f9	SunCorp Industrial Limited
vid_061d	Quatech, Inc.	vid_119a	ZHAN QI Technology Co., Ltd.	vid_15fa	Department of Defense
vid_0623	Littelfuse, Inc.	vid_11a3	Technovas Co., Ltd.	vid_15fb	R-Quest Technologies, LLC
vid_0624	Avocent Corporation	vid_11aa	GlobalMedia Group, LLC	vid_15fc	Humen Xintai Electrical Wires Factory
vid_062e	Mainsuper Enterprises Co., Ltd.	vid_11ab	Exito Electronics Co., Ltd.	vid_15fd	XEMAX Co., Ltd.
vid_0634	Micron Technology, Inc.	vid_11af	Valence Semiconductor	vid_15fe	Provalis Diagnostics Limited
vid_0638	Avision, Inc.	vid_11b0	ATECH FLASH TECHNOLOGY	vid_15ff	Heartsine Technologies Ltd.
vid_0639	Chrontel, Inc.	vid_11b1	New Motion Tec. Corp.	vid_1600	Monisys Limited
vid_0640	Hitex Development Tools	vid_11c0	Sanmos Microelectronics Corp.	vid_1601	Avenues in Leather
vid_0644	TEAC Corporation	vid_11c8	Fullcom Technology Corp.	vid_1602	CompUSA Inc.
vid_064b	Analog Devices, Inc. Development Tools	vid_11c9	Monster Cable Products, Inc.	vid_1603	ERGODEX Corp.
vid_064c	Ji-Haw Industrial Co., Ltd	vid_11cf	Nemoto Kyorindo Co., Ltd.	vid_1604	Kyokko Seiko Co., Ltd.
vid_064e	Suyin Corporation	vid_11d6	FUJIFILM AXIA CO., LTD.	vid_1605	Acces I/O Products, Inc.
vid_064f	WIBU-Systems AG	vid_11db	Topfield Co., Ltd.	vid_1607	ESE Corporate
vid_0655	Space Shuttle Hi-Tech Co.,Ltd.	vid_11e5	CHUFON Technology Co., Ltd.	vid_1608	Inside Out Networks
vid_0656	Glory Mark Electronic Ltd.	vid_11e6	K.I. Technology Co. Ltd.	vid_1609	K-byte (ACI Group)
vid_0657	Tekcon Electronics Corp.	vid_11e7	Rockford Corporation	vid_160a	VIA Networking Technologies, Inc.
vid_065f	Good Way Technology Co., Ltd. & GWC technology Inc	vid_11e8	NAAT Technology Corp.	vid_160b	CSI Wireless Inc.
vid_0660	TSAY-E (BVI) International Inc.	vid_11e9	Wincan Technology Co., Ltd.	vid_160c	Shanghai Tiananxin Information & Tech., Co., Ltd.
vid_0661	Hamamatsu Photonics K.K.			vid_160d	Samtec

vid_0663	Topmax Electronic Co., Ltd.	vid_11ea	PAN RAM International Corp.	vid_160e	INRO Consultants Inc.
vid_066a	Total Technologies, Ltd.	vid_11eb	VTech Innovation L.P. dba Advanced American Telephones	vid_160f	Strand Lighting Limited
vid_066f	SigmaTel, Inc.	vid_11ec	Hitachi Computer Peripherals Co., Ltd.	vid_1610	O-Sense AB
vid_0672	Labtec Inc.	vid_11ef	Cableplus Industrial Co., Ltd.	vid_1611	Vita-Mix Corporation
vid_0678	ACARD Technology Corp.	vid_11f5	Siemens Mobile Phones	vid_1612	Soft DB Inc.
vid_067b	Prolific Technology, Inc.	vid_1202	KUK JE TONG SHIN CO., LTD.	vid_1613	Airconnect Solutions (Asia) Ltd.
vid_067e	Intermec Printer AB	vid_120e	HUDSON SOFT CO., LTD.	vid_1614	Amoi Electronics Co., Ltd.
vid_0680	Realtek Semiconductor Corp., CPP Div.	vid_1217	Goyatek Technology Inc.	vid_1615	Rock Data Services Ltd.
vid_0681	Siemens Information and Communication Products	vid_1218	Geutebrueck GmbH	vid_1616	Cute Mobile Corp.
vid_0686	KONICA MINOLTA TECHNOLOGY CENTER, INC.	vid_1223	SKYCABLE ENTERPRISE. CO., LTD.	vid_1617	Navman
vid_413c	Dell Computer Corp.	vid_1229	EPO Science & Technology Inc.	vid_1618	Redpine Signals, Inc.
vid_0690	Golden Bridge Electech Inc.	vid_122f	Takasic	vid_1619	L & K Precision Technology Co., Ltd.
vid_0693	Hagiwara Sys-Com Co., Ltd.	vid_1230	Chipidea-Microelectronica, S.A.	vid_161a	Celeraise Investments Ltd.
vid_0699	Tektronix, Inc.	vid_1231	CHI MEI COMMUNICATION SYSTEMS, INC.	vid_161b	MYCOM, INC.
vid_069a	Askey Computer Corporation	vid_123b	De La Rue Systems Automatizacao	vid_161c	DigitTech Systems Co., Ltd.
vid_069b	Thomson Inc.	vid_123c	K-Won C & C Co., Ltd.	vid_161d	Delfin Technologies Ltd.
vid_4242	USB Design By Example	vid_1242	MAC SYSTEM CO., LTD.	vid_161e	Aerotech Inc.
vid_06a3	Saitek PLC	vid_124a	AirVast Technology Inc.	vid_161f	Prosisa International LLC
vid_06a4	Xiamen Doowell Electron Co., Ltd.	vid_124b	NYKO Technologies, Inc.	vid_1620	Accesstek Inc.
vid_06ad	Greatland Electronics Taiwan Ltd.	vid_1251	Iwaya Corporation	vid_1621	Orion Microelectronics Corp.
vid_06ae	Professional Multimedia Testing Centre	vid_1252	Nexway Co., Ltd.	vid_1622	California Instruments
vid_06b8	Pixela Corporation	vid_1253	Erebus Limited	vid_1623	Mindtech Limited
vid_06b9	Thomson Telecom	vid_125a	Shintake Sangyo Co., Ltd.	vid_1624	AIOI Systems, USA Corp.
vid_06ba	Smooth Cord & Connector Co., Ltd.	vid_1261	All Ring Tech Co., Ltd.	vid_1625	Stonewood
vid_06bc	Oki Data Corporation	vid_1262	MICRO VISION CO., LTD.	vid_1626	Advance Data Technology Corporation
vid_06bf	Leoco Corporation	vid_126b	Veridian Systems	vid_1627	IPextreme, Inc.
vid_06c4	Bizlink International Corporation	vid_126c	Aristocrat Technologies	vid_1628	Stonestreet One, Inc.
vid_06c8	SIIG, Inc.	vid_126d	Bel Stewart	vid_1629	Erae Electronics
vid_06cb	Synaptics Inc.	vid_126e	Strobe Data, Inc.	vid_162a	Airgo Networks Inc.
vid_06cd	Keyspan	vid_126f	TwinMOS Technologies Inc.	vid_162b	Acksys
vid_06d3	Mitsubishi Electric Corporation	vid_1270	Procomp Informatics Ltd.	vid_162c	Ecler Laboratorio de Electroacustica S.A.
vid_06dc	Foxlink Image Technology Co., Ltd.	vid_1271	Foxyda Technology Industrial (Shenzhen) Co., Ltd.	vid_162d	Control Instruments Development (Pty) Ltd.
vid_06f2	Emine Technology Company	vid_1272	Linear Technology Corporation	vid_162e	Joytech Europe Ltd.
vid_0703	Bvtech Industry Inc.	vid_1280	Animeta Systems Inc.	vid_162f	WiQuest Communications, Inc.
vid_070a	Oki Electric Industry Co., Ltd	vid_1281	Gean Sen Electronic Co., Ltd.	vid_1630	OformX
vid_070d	Comoss Electronic Co., Ltd.	vid_1286	MARVELL SEMICONDUCTOR, INC.	vid_1631	Focus Enhancements
vid_070e	Excel Cell Electronic Co., Ltd.	vid_1291	Flarion Technologies	vid_1632	Data Ray Inc.
vid_0710	Connect Tech Inc.	vid_1292	Fire International Ltd.	vid_1633	AIM GmbH
vid_0711	Magic Control Technology Corp.	vid_129b	CyberTAN Technology Inc.	vid_1634	ABB Switzerland Ltd.
vid_0718	Imation Corp.	vid_129c	Min Aik Technology Co., Ltd.	vid_1635	Doble Engineering Co.
vid_071d	Eicon Networks Corporation	vid_129d	Yueqing Longhua Electronics Factory	vid_1636	Kobe-Addtech Co., Ltd.
vid_0732	Goldfull Electronics & Telecommunications Corp.	vid_12a3	KENT WORLD CO., LTD.	vid_1637	LZAE LUMEL SA
vid_0736	Lorom Industrial Co., Ltd.	vid_12a4	Guangdong Matsunichi Communications Technology Co., Ltd	vid_1638	Skyworks Solutions
vid_0738	Mad Catz, Inc.	vid_12ab	Honey Bee Electronic International Ltd.	vid_1639	BeRiver Electronics Co., Ltd.
vid_074d	Micronas GmbH	vid_12ad	Asahi Seiko Co., Ltd.	vid_163a	Traficon N.V.
vid_0757	Network Technologies, Inc.	vid_12b2	DICKSON Company	vid_163b	Controlled Speed Engineering Ltd.
vid_0764	Cyber Power Systems, Inc.	vid_12b3	Megaforce Company Ltd.	vid_163c	Watchdata System Co., Ltd.
vid_0765	X-Rite Incorporated	vid_12b8	Zhejiang Xinya Electronic Technology Co., Ltd	vid_163d	Million Tech Dev. Ltd.
vid_0766	Jess-Link Products Co., Ltd. (JPC)	vid_12b9	Freehand Systems, Inc.	vid_163e	HongLin Electronics Co., Ltd.
vid_0768	Camtel Technology Corp.	vid_12ba	Sony Computer Entertainment America	vid_163f	AVEX Technologies, Inc.
vid_076b	OMNIKEY AG	vid_12bd	Sun Light Application Co., Ltd.	vid_1640	M3 Electronics, Inc.
vid_076d	Denso Corporation	vid_12c9	Newmen Technology Corp. Ltd.	vid_1641	eMagin Corporation
vid_076f	Jhen Vei Electronic Co., Ltd.	vid_12d1	Huawei Technologies Co., Ltd.	vid_1642	AquaSensors LLC
vid_0777	Comda Enterprise Corporation	vid_12d2	LINE TECH INDUSTRIAL CO., LTD.	vid_1643	Sanwa Newtec Co., Ltd.
vid_0779	Fairchild Semiconductor	vid_12d7	BETTER WIRE FACTORY CO., LTD.	vid_1644	Active Technologies SRL
vid_077a	Sankyo Seiki Mfg. Co., Ltd.	vid_12d8	Araneus Information Systems Oy	vid_1645	Smiths Heimann Biometrics GmbH
vid_0781	SanDisk Corporation	vid_12d9	DIGITFAB INTERNATIONAL CO., LTD.	vid_1646	Alltronic, Inc.
vid_0789	Logitech Corporation	vid_12dd	Alec Electronics Co.,Ltd.	vid_1647	Horizon Navigation, Inc.
vid_0791	Copartner Wire and Cable Mfg. Corp.	vid_12de	National Display Systems	vid_1648	Wood Head Software & Electronics
vid_0793	Wha Yu Industrial Co., Ltd.	vid_12e4	Bruel & Kjaer Sound & Vibration Meas. AS	vid_1649	Softec Microsystems
vid_07a2	National Technical Systems	vid_12e9	Mindspeed Technologies	vid_164a	ChipX
vid_07a3	ONNTO Corp.	vid_12f4	Glovic Electronics Corp.	vid_164b	Lytech Technology Inc.
vid_07a6	ADMtek Incorporated	vid_12f5	Dynamic System Electronics Corp.	vid_164c	Matrix Vision GmbH
vid_07ab	Freecom Technologies	vid_12f7	Remorex Products, Inc.	vid_164d	DASAN Networks, Inc.
vid_07b2	Motorola BCS	vid_12f9	RF-LINK SYSTEMS, INC.	vid_164e	Picotest Corp.
vid_07b3	Plustek, Inc.	vid_12fa	RF Micro Devices	vid_164f	Kinkei System Co., Ltd.
vid_07b4	OLYMPUS CORPORATION	vid_12fe	E.U CONNECTOR(M) SDN BHD.	vid_1650	Remopro Technology Inc.
vid_07b5	Mega World International Ltd.	vid_1306	Torcon Instruments Inc.	vid_1651	PACOMP
vid_07b7	TIME Interconnect Ltd.			vid_1652	EFull Tech. Corp. Ltd.
vid_07b8	AboCom Systems, Inc.			vid_1653	Nissho Electronics Co., Ltd.

vid_07c4	Datafab Systems Inc.	vid_1307	USBest Technology Inc.	vid_1654	Stamer Musikanlagen GmbH
vid_07ca	AVerMedia Technologies, Inc.	vid_1317	PC-CRAFT Co., Ltd.	vid_1655	Dtron Co., Ltd.
vid_07cc	Carry Computer Eng., Co., Ltd.	vid_1318	O'RITE TECHNOLOGY Co., Ltd.	vid_1656	OSC Audio Products, Inc.
vid_07cf	Casio Computer Co., Ltd.	vid_131f	Ayuttha Technology Corp.	vid_1657	Struck Innovative Systeme GmbH
vid_07d3	Cyberdata Corp.	vid_1323	Zeustech Company Limited	vid_1658	Grayhill Inc.
vid_07da	Arasan Chip Systems Inc.	vid_1324	H-Mod, Inc.	vid_1659	Latham Time Corp.
vid_07df	David Electronics Company, Ltd.	vid_1329	Apparent Technologies, Inc.	vid_165a	E.D.P. SRL
vid_07e6	Allied Cable Corporation	vid_132a	Envara	vid_165b	Frontier Design Group
vid_07eb	Double-H Technology Co., Ltd.	vid_132b	Konica Minolta Holdings, Inc.	vid_165c	Kondo Kagaku Co., Ltd.
vid_07ec	Taiyo Electric Wire & Cable Co., Ltd.	vid_132c	Le Prestique International (H.K.) Ltd.	vid_165d	Orange Tree Technologies Ltd.
vid_07f6	Circuit Assembly Corp	vid_133b	FLASH SUPPORT GROUP, INC.	vid_165e	Pangolin
vid_07f7	Century Corporation	vid_133c	G-Design Technology	vid_165f	Ansync Inc.
vid_07f9	Dotop Technology, Inc.	vid_1342	Sutter Instrument Company	vid_1660	Creatix Polymedia GmbH
vid_0801	Mag-Tek	vid_1345	Sino Lite Technology Corp.	vid_1661	DVS Korea Co., Ltd.
vid_080a	Evermuch Technology Co., Ltd.	vid_1348	Katsuragawa Electric Co., Ltd.	vid_1662	Positivo Informatica LTDA
vid_081b	Indigita Corporation	vid_1356	Techpoint Electric Wire & Cable Co., Ltd.	vid_1663	Sercel, Inc.
vid_081e	AlphaSmart, Inc.	vid_135b	M-System Co., Ltd.	vid_1664	ARGOX INFORMATION CO., LTD.
vid_0825	GC Protronics	vid_136a	Pelco	vid_1665	General Dynamics Canada
vid_0826	Data Transit	vid_136b	SimpleTech	vid_1666	Vanguard Instruments Co., Inc.
vid_0828	Sato Corporation	vid_136c	Datastor Technology Co., Ltd.	vid_1667	GIGA-TMS, INC.
vid_0832	Kouwell Electronics Corp.	vid_1370	Swissbit AG	vid_1669	PIKRON s.r.o.
vid_0835	Action Star Enterprise Co., Ltd.	vid_1374	American Anko Co.	vid_166a	Clipsal Integrated Systems
vid_0839	Samsung Techwin	vid_1375	TCL MOBILE COMMUNICATION CO., LTD.	vid_166b	PedalPax Corporation
vid_083a	Accton Technology Corporation	vid_1376	Vimtron Electronics Co., Ltd.	vid_166c	Technology Driven Solutions Ltd
vid_0840	Argosy Research Inc.	vid_137c	Yaskawa Electric Corporation	vid_166d	MCS Logic Inc.
vid_0844	Welland Industrial Co., Ltd.	vid_137d	Pericom Taiwan Limited	vid_166e	SerComm Corporation
vid_0846	NETGEAR, Inc.	vid_137e	XL Microwave, Inc.	vid_166f	Idetech Europe S.A.
vid_0851	Macronix International Co., Ltd.	vid_1389	Coolnection Technology Co., Ltd.	vid_1670	Hach Company
vid_086a	Emagic Soft-und Hardware GmbH	vid_1390	TOMTOM B.V.	vid_1671	Telular Corporation
vid_086e	System TALKS Inc.	vid_1395	Sennheiser Communications A/S	vid_1672	MBS GmbH
vid_086f	MEC IMEX INC/HPT	vid_1396	Silicon Storage Technology, Inc.	vid_1673	ROBOTIKER
vid_0874	A-Tec Subsystem, Inc.	vid_13a4	Equipment Systems & Devices	vid_1674	Pantone, Inc.
vid_087e	Fujitsu Computer Products of America	vid_13a5	Sammy Corporation	vid_1675	SE-IR Corporation
vid_087f	QualCore Logic Inc	vid_13a6	Jeppesen Sanderson Inc.	vid_1676	I-Ware Laboratory Co., Ltd.
vid_0886	XAC Automation Corp.	vid_13a8	Grandtec Electronic Corp	vid_1677	China Integrated Circuit Design Corp., Ltd.
vid_55aa	OnSpec Electronic Inc.	vid_13b0	PerkinElmer Optoelectronics	vid_1678	Matsunichi Information Technology (Shenzhen) Co., Ltd.
vid_089d	Icron Technologies Corporation	vid_13b1	Cisco-Linksys, LLC	vid_1679	Total Phase
vid_089e	NST Co., Ltd.	vid_13b2	ALESIS	vid_167a	USBWARE
vid_08ae	Macally (Mace Group, Inc.)	vid_13b3	Nippon Dics Co., Ltd.	vid_167b	Pure Digital Technologies
vid_08b9	RadioShack Corporation	vid_13b8	PDM Electronic Co., Ltd.	vid_167c	Vionics
vid_08bb	Texas Instruments Japan	vid_13be	Ricoh Printing Systems, Ltd.	vid_167d	SIM Security & Electronic System GmbH
vid_08c7	TAI TWUN ENTERPRISE CO., LTD.	vid_13bf	Accusys, Inc.	vid_167e	Videa Technology Inc.
vid_08c8	2Wire, Inc	vid_13c0	Stream Labs	vid_167f	Actigraph, LLC
vid_08ca	AIPTEK International Inc.	vid_13c1	Vivitar Corporation	vid_1680	KaVo Dental GmbH
vid_08dd	Billionton Systems, Inc.	vid_13c9	LinearX Systems Inc.	vid_1681	Prevo Technologies, Inc.
vid_08e4	Pioneer Corporation	vid_13ca	Suzhou Jye Tai Precision Industrial Co., Ltd.	vid_1682	Maxwise Production Enterprise Ltd.
vid_08e6	GEMPLUS	vid_13cb	JTEK Technology Corporation	vid_1683	DualCor Technologies, Inc.
vid_08ec	M-Systems Flash Disk Pioneers	vid_13cc	Cellvic Corporation	vid_1684	Godspeed Computer Corp.
vid_08f0	Corex Technologies	vid_13cf	Wisair Ltd.	vid_1685	Tanic Electrics Ltd.
vid_08f1	CTI Electronics Corporation	vid_13d1	A-MAX Technology Co., Ltd.	vid_1686	ZOOM Corporation
vid_08f9	Wipro Technologies	vid_13d2	Intelligraphics, Inc.	vid_1687	Kingmax Digital Inc.
vid_08ff	AuthenTec, Inc.	vid_13d3	TwinHan Technology Co., Ltd.	vid_1688	AerotechTelub AB
vid_0906	FARADAY Technology Corp.	vid_13dc	ALEREON, INC.	vid_1689	Griffin International Companies, Inc.
vid_0909	Audio-Technica Corp.	vid_13dd	i.Tech Dynamic Limited	vid_168a	Veeco Instruments
vid_090c	Silicon Motion, Inc. - Taiwan	vid_13de	LANKOM ELECTRONICS CO., LTD.	vid_168b	BTC Secu Co., Ltd.
vid_090f	Fujitsu Devices Inc.	vid_13df	Good Fancy Enterprise Co., Ltd.	vid_168c	Tabor Electrics Ltd.
vid_0911	Philips Speech Processing	vid_13e0	Taiwan Silicon Electronics Corp.	vid_168d	YSI, Inc.
vid_0915	GlobespanVirata, Inc.	vid_13e1	Kaibo Wire & Cable (Shenzhen) Co., Ltd.	vid_168e	iMetrikus Inc.
vid_0917	SmartDisk Corporation	vid_13e6	TechnoScope Co., Ltd.	vid_168f	ETA S.A. Manufacture Horlogere Suisse
vid_091e	Garmin International	vid_13ea	I/F - COM A/S	vid_1690	Simple Solutions
vid_0924	Xerox Corporation	vid_13f4	Verisity Design Inc.	vid_1691	Landers Instruments
vid_0928	Oxford Semiconductor Ltd.	vid_13f6	Aspen Touch Solutions, Inc.	vid_1692	Weatherford
vid_092a	Toshiba Information & Industrial Sys. And Services	vid_13f7	Corevalley Co., Ltd.	vid_1693	Zultys Technologies
vid_0930	Toshiba Corporation	vid_13f8	EZPnP Technologies Corp.	vid_1694	Plant Equipment, Inc.
vid_0939	Lumberg, Inc.	vid_13fe	Phison Electronics Corp.	vid_1695	FATAR, S.r.l.
vid_093a	Pixart Imaging, Inc.	vid_13ff	VIEWCON ELECTRONIC LTD.	vid_1696	Hitachi Advanced Digital, Inc.
vid_093b	Plextron Corp.	vid_1400	Axxion Group Corp.	vid_1697	VTEC TEST, INC.
vid_093e	J.S.T. Mfg. Co., Ltd.	vid_1401	Fulhua Microelectronics Corp.	vid_1698	Eurosmart
vid_0955	NVIDIA	vid_1402	Bowe Bell & Howell	vid_1699	United RadioTek Inc.
vid_0957	Agilent Technologies, Inc.			vid_169a	Ten X Technology Inc.

vid_0959	Cologne Chip AG	vid_1403	Sitronix Technology Corp.	vid_169b	aitronic GmbH
vid_095d	Polycom, Inc.	vid_140e	Telechips, Inc.	vid_169c	DMS
vid_0973	Axalto	vid_1415	Sony Computer Entertainment Europe	vid_169e	Groupics.com, Inc.
vid_097f	Barun Electronics Co. Ltd.	vid_1419	ABILITY ENTERPRISE CO., LTD.	vid_169f	OGSK, Inc.
vid_0984	Apricorn	vid_141a	Realm Systems Inc.	vid_16a0	Real Thoughts GmbH
vid_09a4	Contech Research, Inc.	vid_141b	METRAWARE	vid_16a1	Trillithic, Inc.
vid_09a8	Lin Shiang Enterprise Co., Ltd.	vid_141c	Leviton Manufacturing	vid_16a2	Sypris Test and Measurement (FW Bell)
vid_09ae	Tripp Lite	vid_1421	Sensor Technologies America, Inc.	vid_16a3	B & W Tek Inc.
vid_09c1	Arris Interactive LLC	vid_1429	Vega Technologies Industrial (Austria) Co., Ltd.	vid_16a4	Sagutech Microsystems
vid_09c2	NISCA Corporation	vid_1430	RedOctane	vid_16a5	Shenzhen Zhengerya Cable Co., Ltd.
vid_09cc	Workbit Corporation	vid_1434	Comart System Co., Ltd.	vid_16a6	UNIGRAF OY
vid_09cf	Electronics Testing Center, Taiwan	vid_1435	Wistron NeWeb Corp.	vid_16a7	Sauer-Danfoss
vid_09d1	NeoMagic Inc.	vid_1436	Denali Software, Inc.	vid_16a8	Nice Systems
vid_09da	A-FOUR TECH CO., LTD.	vid_1438	My3ia (Beijing) Technology Ltd.	vid_16a9	Worth-Pfaff Innovations, Inc.
vid_09dd	Fellowes Inc.	vid_1439	Wind River Systems Inc.	vid_16aa	Symtx Inc.
vid_09e5	Jo-Dan International, Inc.	vid_143a	CP Technologies	vid_16ab	InnoWireless Co. Ltd.
vid_09e8	AKAI professional M.I. Corp.	vid_1442	Canadian Bank Note Company, Limited	vid_16ac	Dongguan ChingLung Wire & Cable Co., Ltd.
vid_09f8	SoftConnex Technologies, Inc.	vid_1445	JUSTER CO., LTD.	vid_16ad	Siemens VDO Trading GmbH
vid_09fa	Mtek Vision	vid_1455	Georgia Technology Corp.	vid_16ae	ELSA Japan Inc.
vid_09fb	Altera	vid_1456	Extending Wire & Cable Co., Ltd.	vid_16af	Intelligent Mechatronic Systems
vid_6400	Springer Design, Inc.	vid_1459	Shanghai Simax Micro-electronics Co., Ltd.	vid_16b0	Infosight Corp.
vid_0a12	Cambridge Silicon Radio Ltd.	vid_145b	Lead-Type Precision Electronics Co., Ltd.	vid_16b1	Cami Research Inc.
vid_0a14	Spacelabs Medical Inc.	vid_145e	Forschungszentrum Karlsruhe GmbH	vid_16b2	Bruxton Corporation
vid_0a16	Trek Technology (S) Pte Ltd	vid_1461	Staccato Communications	vid_16b3	Eizoken Inc.
vid_0a17	PENTAX Corporation	vid_1462	Bright Computech Co., Ltd.	vid_16b4	Digital Cube
vid_0a21	Medtronic Physio Control Corp.	vid_1463	BBWM Corp.	vid_16b5	PerSen Technologies, Inc.
vid_0a3c	NTT DoCoMo, Inc.	vid_1464	Asiamajor Inc.	vid_16b6	Nexus Technology Inc.
vid_0a47	Hirose Electric	vid_146d	Progeny Inc.	vid_16b7	Pulsafeeder Inc.
vid_0a48	I/O Interconnect	vid_146e	ClearOne Communications	vid_16b8	Honeywell Life Safety
vid_0a4c	COMPUTEX Co., Ltd.	vid_146f	Unity Electrical Ind. Ltd.	vid_16b9	Origin Technologies Limited
vid_0a50	Mimaki Engineering Co., Ltd.	vid_1470	STARRIVER TECHNOLOGY CO., LTD.	vid_16ba	SmarTec
vid_0a53	Portable Peripheral Co., Ltd.	vid_1472	Hangzhou Huawei-3Com Tech. Co., Ltd.	vid_16bb	Tomra Systems ASA
vid_0a5c	Broadcom Corp.	vid_1473	Dingo Incorporated	vid_16bc	JOBO AG
vid_0a66	ClearCube Technology	vid_147f	Hama GmbH & Co., KG	vid_16bd	Leica Geosystems AG
vid_0a68	COMAIDE Corporation	vid_1484	Triad Semiconductor, Inc.	vid_16be	RyuSy Industrial Co., Ltd.
vid_0a6b	Green House Co., Ltd.	vid_1485	OrangeWare Corp.	vid_16bf	CAST, INC.
vid_0a70	International Game Technology	vid_1487	DSP Group, Ltd.	vid_16c0	Van Ooijen Technische Informatica
vid_0a7d	NSTL, Inc.	vid_1488	Orion Technology Corp.	vid_16c1	Lucas-Nuelle GmbH
vid_0a81	CHESEN ELECTRONICS CORP.	vid_148d	DESMA Co., Ltd.	vid_16c2	Amphenol-Data Telecom
vid_0a82	SYSCAN	vid_148e	EVATRONIX SA	vid_16c3	Nihon Kaiheiki Ind. Co., Ltd.
vid_0a83	NextComm, Inc.	vid_148f	Ralink Technology, Corp.	vid_16c4	SavaJe Technologies, Inc.
vid_0a8e	Japan Aviation Electronics Industry Ltd. (JAE)	vid_1497	Panstrong Company Ltd.	vid_16c5	Cryptek Inc.
vid_0a91	Globlink Technology Inc.	vid_1498	ULI Electronics Inc.	vid_16c6	TZero Technologies, Inc.
vid_0a93	C Technologies AB (publ)	vid_1499	G-STAR Communications, Ltd.	vid_16c7	Crystal Technology, Inc.
vid_6a75	Shanghai Jujo Electronics Co., Ltd.	vid_149a	Imagination Technologies	vid_16c8	Technische Universiteit Eindhoven
vid_0aa7	Wincor Nixdorf GmbH & Co KG	vid_149e	Amkor Technology	vid_16c9	OCT Co., Ltd.
vid_0aa8	TriGem Computer, Inc.	vid_149f	Wits Technologies Pte. Ltd.	vid_16ca	Wireless Cables Inc.
vid_0aad	Rohde & Schwarz GmbH & Co. KG	vid_14a5	I-ROCKS TECHNOLOGY CO., LTD.	vid_16cb	Highwater Designs Limited
vid_0ac3	SANYO Semiconductor Company Micro	vid_14ad	CTK Corporation	vid_16cc	silix technology, Inc.
vid_0ac4	LECO CORPORATION	vid_14ae	Printronic Inc.	vid_16cd	Brian Moore Guitars, Inc.
vid_0ac8	Vimicro Corporation	vid_14af	ATP Electronics Inc.	vid_16ce	IPFlex Inc.
vid_0ac9	Micro Solutions, Inc.	vid_14b0	Startech.com Ltd.	vid_16cf	YAZAKI PARTS CO., LTD.
vid_0ae4	Taito Corporation	vid_14b4	Inventec Appliances Corp.	vid_16d0	MCS Electronics
vid_0aec	Neodio Technologies Corporation	vid_14b9	BP Microsystems	vid_16d1	SUPREMA, INC.
vid_0afd	Tateno Dennou, Inc.	vid_14ba	FLOVEL CO., LTD.	vid_16d2	TOMEY
vid_0b00	INGENICO	vid_14bb	Assembly Tech. Co., Ltd.	vid_16d3	Frontline Test Equipment, Inc.
vid_0b05	ASUSTek Computer Inc.	vid_14c0	Rockwell Automation, Inc.	vid_16d4	SRTechnologies
vid_0b0c	Todos Data System AB	vid_14c1	SOHYA TECHNOLOGY CO., LTD.	vid_16d5	AnyDATA Corporation
vid_0b1e	Electronic Warfare Assoc., Inc. (EWA)	vid_14c2	Gemlight Computer Ltd.	vid_16d6	Jablotron
vid_0b20	TransDimension Inc.	vid_14c3	Smart Link Ltd.	vid_16d7	Aprillis, Inc.
vid_0b21	Yokogawa Electric Corporation	vid_14cd	MOAI ELECTRONICS CORPORATION	vid_16d8	CMOTECH CO., LTD.
vid_0b23	Pan-Asia Electronics Co., Ltd.	vid_14d8	Jamer Enterprises Company Limited	vid_16d9	A7 Engineering, Inc.
vid_0b27	Ritek Corporation	vid_14d9	Advanced Flash Memory Card Technology Ltd.	vid_16da	Linkam Scientific Instruments Ltd.
vid_0b37	Hitachi ULSI Systems Co., Ltd.	vid_14da	Hong Technical Enterprise Co., Ltd.	vid_16db	Eridon Corporation
vid_0b39	Omnidirectional Control Technology Inc.	vid_14dd	Raritan Computer, Inc.	vid_16dc	W-IE-NE-R, Plein & Baus GmbH
vid_0b3c	Olivetti Tecnost	vid_14de	Jetway Information Co., Ltd.	vid_16dd	YOSHIDA SEIKI CO., LTD.
vid_0b48	TechnoTrend AG	vid_14df	ORGA Test Systems GmbH	vid_16de	Schneider Electric
vid_0b4e	Musical Electronics Ltd.	vid_14e0	Winradio Communications	vid_16df	King Billion Electronics Co., Ltd.
vid_0b54	Sinbon Electronics Co., Ltd.	vid_14e1	Dialogue Technology Corp.	vid_16e0	Lumex Ltd.
vid_0b61	NEC Viewtechnology, Ltd.			vid_16e1	Bed Check Corporation

vid_0b62	Orange Micro, Inc.	vid_14e2	Avistar Communications Corporation	vid_16e2	Hitachi I E Systems Co., Ltd.
vid_0b6a	Maxim Integrated Products	vid_14e3	Medmont Pty Ltd.	vid_16e3	ITM Inc.
vid_0b6f	Nagano Japan Radio Co., Ltd	vid_14e4	S.CAM Co., Ltd.	vid_16e4	Franklin Electric Co., Inc.
vid_0b70	PortalPlayer, Inc	vid_14e5	SAIN Information & Communications Co., Ltd.	vid_16e5	Tokimec Rail Techno Inc.
vid_0b75	Roland DG Corporation	vid_14e6	Micromed Biotecnologia Ltda.	vid_16e6	Diginfo Technology Corporation
vid_0b85	Elkat Electronics (M) SDN. BHD.	vid_14e7	ISS Incorporated	vid_16e7	United Keys, Inc.
vid_0b95	ASIX Electronics Corp.	vid_14e8	Animated Lighting LC	vid_16e8	Frontier Information Enterprise, Inc.
vid_0b96	SEWON TELECOM	vid_14e9	Lifetouch, Inc.	vid_16e9	Dr. Gal Ben-David
vid_0bb0	Concord Camera Corp.	vid_14ea	Kosaka Laboratory Ltd.	vid_16ea	Avionica, Inc.
vid_0bb2	Ambit Microsystems Corporation	vid_14eb	Pendulum Instruments AB	vid_16eb	Helvar
vid_0bb4	High Tech Computer, Corp. (HTC)	vid_14ec	Vansco Electronics Ltd.	vid_16ec	ASAHI GLASS CO., LTD.
vid_0bb5	Murata Manufacturing Co., Ltd.	vid_14ed	Shure Inc.	vid_16ed	Parker Vision Inc.
vid_0bb8	Renesas Technology Sales Co., Ltd.	vid_14ee	INFORAD Ltd.	vid_16ee	Ryvor Corp.
vid_0bc3	IPWireless, Inc.	vid_14ef	AVICLink Corporation	vid_16ef	Global Safety & Security Solutions OY
vid_0bc7	X10 Wireless Technology, Inc.	vid_14f0	GE	vid_16f0	GN ReSound
vid_0bda	Realtek Semiconductor Corp.	vid_14f1	America Hears, LLC.	vid_16f1	Versus Technology, Inc.
vid_0bdb	Ericsson Mobile Platforms	vid_14f2	Axess AG	vid_16f2	St. Jude Medical AB
vid_0be2	Kanda Tsushin Kogyo Co., LTD	vid_14f3	BAP IMAGE SYSTEMS	vid_16f3	Hammer Storage/Bell Microproducts
vid_0be4	Elka International Ltd.	vid_14f4	Accell Corporation	vid_16f4	Lineeye Co., Ltd.
vid_0be6	Dong Guan Humen Wonderful Wire Cable Factory	vid_14f5	SourceQuest, Inc.	vid_16f5	Futurelogic Inc.
vid_0bf6	Addonics Technologies, Inc.	vid_14f6	Symbium Corporation	vid_16f6	Shin Tek Inc.
vid_0bf8	Fujitsu Siemens Computers	vid_14f7	TechniSat Digital GmbH	vid_16f7	Japan Gals Co., Ltd.
vid_0c24	Taiyo Yuden	vid_14f8	Chenrol Electric Wire & Cable Co., Ltd.	vid_16f8	Ever Bright Wire Factory
vid_0c39	Aeroflex	vid_14f9	Full Conductor Electric Appliance Manufacturere	vid_16f9	Astrosys International Limited
vid_0c3c	Radius Co., Ltd.	vid_14fa	The Wild Divine Project	vid_16fa	Shachihata Inc.
vid_0c44	Motorola IDEN	vid_14fb	JAI	vid_16fb	MICRONIX CORPORATION
vid_0c45	Sonix Technology Co., Ltd.	vid_14fc	Signami LLC	vid_16fc	TRICOM TECHNOLOGIES, INC.
vid_0c54	GLORY LTD.	vid_14fd	IPC Information Systems	vid_16fd	Reakin Technology Corporation
vid_0c55	Spectrum Digital Inc.	vid_14fe	Madrics Media GmbH Europe	vid_16fe	Su Zhou Song Qing Electrical Co., Ltd.
vid_0c56	Billion Bright Limited	vid_14ff	Twinhead International Corp.	vid_16ff	Ultimate Technology Corp.
vid_0c57	Imaginative Design Operation Co. Ltd.	vid_1500	Ellisys	vid_1700	Hunt Engineering (UK) Ltd.
vid_0c59	Dong Guan Shinko Wire Co., Ltd.	vid_1501	Pine-Tum Enterprise Co., Ltd.	vid_1701	Peyroutet Telecom
vid_0c62	Chant Sincere Co., Ltd	vid_1502	Peavey Electronics	vid_1703	NormSoft, Inc.
vid_0c64	Signality System Engineering Co., Ltd.	vid_1503	Stretch Inc.	vid_1704	ANIMATICS CORP.
vid_0c65	Eminence Enterprise Co., Ltd.	vid_1504	KOREA PRINTING SYSTEMS CO., LTD.	vid_1705	Aerosonic Corporation
vid_0c7a	Wing-Span Enterprise Co., Ltd.	vid_1505	Extraordinary Technologies Pty. Ltd.- Trading as Halcro	vid_1706	BlueView Technologies, Inc.
vid_0c99	Innochips Co., Ltd.	vid_1506	T.D. Technecon Ltd.	vid_1707	ARTIMI
vid_0c9a	Hanoool Robotics Corp	vid_1507	APIM INFORMATIQUE	vid_1708	Mibudenki Industrial Co., Ltd.
vid_0cad	Motorola GEMS	vid_1508	MAATEL	vid_1709	Sanmina-SCI
vid_0caf	Buslink	vid_1509	LI-COR Biosciences, Inc.	vid_170a	MAXTEK, INC.
vid_0cbb	Shanghai Darong Electronics Co., Ltd.	vid_150a	TiVo Inc.	vid_170b	Phonic Corp.
vid_0cbf	Union Genius Computer Co., Ltd	vid_150b	COLLEX COMMUNICATION CORP.	vid_170c	BlueTree Wireless Data
vid_0cc0	Kuon Yi Industrial Corp.	vid_150c	Brightwell Dispenses Ltd.	vid_170d	Avnera
vid_0cc4	emsys GmbH	vid_150d	PR Electronics A/S	vid_170e	Iris Corporation Berhad
vid_0cca	AMPHENOL	vid_150e	Ono Sokki Co., Ltd.	vid_170f	UbiBro Technolgies Inc.
vid_0ccc	DOMEX TECHNOLOGY CORPORATION	vid_150f	Nidec Nemicon Corporation	vid_1710	AZIO Corporation
vid_8020	Trinity, Inc.	vid_1510	RACEWOOD TELECOM CO., LTD.	vid_1712	Fujitsu LSI Technology Ltd.
vid_80cd9	Hitachi Shin Din Cable Limited	vid_1511	BridgeCo, AG	vid_1713	Enter Tech Co., Ltd
vid_8086	Intel Corporation	vid_1512	Software Technologies Group, Inc.	vid_1714	iCRco
vid_0cf1	e-CONN ELECTRONIC CO., LTD.	vid_1513	Hypercom	vid_1715	NL Technology
vid_0cf2	ENE Technology Inc.	vid_1514	ACTEL CORPORATION	vid_1716	LHR Technologies
vid_0cf3	Atheros Communications, Inc.	vid_1515	Hexon Media Pte Ltd	vid_1717	Formats Unlimited, Inc.
vid_0cf6	Compucable Corporation	vid_1516	Skymedi Corporation	vid_1718	Mobile Doctor Co., Ltd.
vid_0cf9	Central System Research Co., Ltd.	vid_1517	Precisa Instruments AG	vid_1719	American Technology Corp.
vid_0cfc	Konica-Minolta	vid_1518	Cheshire Engineering Corporation	vid_171a	PSI Printer Systems international GmbH
vid_0d0c	Astron Electronics Co., Ltd.	vid_1519	Comneon GmbH Co., Ohg.	vid_171b	NT Ware Systemprogrammierung GmbH
vid_0d0f	Feng Shin Cable Co. Ltd.	vid_151a	RoyalTek Company Ltd.	vid_171c	IER
vid_0d13	BMF CORPORATION	vid_151b	HOSTNET CO.	vid_eb1a	Empia Technology, Inc.
vid_0d16	Hi-Touch Imaging Technologies Co., Ltd.	vid_151c	VeriSilicon, Inc.	vid_19a8	Biforst Technology Inc.
vid_0d17	NALTEC, Inc.	vid_151d	P W Allen & Co.	vid_1b15	i3micro technology ab
vid_0d19	Hank Connection Industrial Co., Ltd.	vid_151e	Circad Design Ltd.	vid_1ebb	NuCORE Technology, Inc.
vid_0d35	Dah Kun Co., Ltd.	vid_151f	Opal Kelly Incorporated	vid_2040	Hauppauge Computer Works, Inc.
vid_0d3c	SRI CABLE TECHNOLOGY LTD.	vid_1520	Bitwire Corp.	vid_22b8	Motorola PCS
vid_0d3d	TANGTOP TECHNOLOGY CO., LTD.	vid_1521	S++ Simulation Services	vid_22b9	eTurboTouch Technology Inc.
vid_0d41	Ta Yun Terminals Industrial Co., Ltd.	vid_1522	Educational Insights	vid_2304	Pinnacle Systems, Inc.
vid_0d42	FULL DER CO., LTD.	vid_1523	SII NanoTechnology Inc.	vid_2408	Catalyst Enterprises, Inc.
vid_0d49	Maxtor	vid_1524	SCIENTEX Inc.	vid_2645	Lead Data Inc.
vid_0d4a	NF Corporation	vid_1525	Newson Engineering NV	vid_2650	Electronics For Imaging, Inc.
vid_0d4b	Grape Systems Inc.	vid_1526	ARDUC Co., Ltd.		
vid_0d4d	Coherent Inc.				

vid_0d51	Volex (Asia) Pte Ltd	vid_1527	iQue Ltd.
vid_0d55	ASKA Technologies Inc.	vid_1528	HighAndes Limited
vid_0d56	AVLAB Technology, Inc.	vid_1529	UBIQUAM CO., LTD.
vid_0d61	MEILU ELECTRONICS (SHENZHEN) CO., LTD.	vid_152a	Thesycon Systemssoftware & Consulting GmbH
vid_0d62	Darfon Electronics Corp.	vid_152b	MIR-Medical International Research
vid_0d6a	eMegaTech International Corp.	vid_152c	titel++
vid_0d70	Try Computer Co. LTD	vid_152d	JMicron Technology Corp.
vid_0d7a	MARX CryptoTech LP	vid_152e	HLDS (Hitachi-LG Data Storage, Inc.)
vid_0d7c	Taiwan Line Tek Electronic Co., Ltd.	vid_152f	PRO-MECH CORPORATION
vid_0d7d	Add-On Technology Co., Ltd.	vid_1530	Martsoft Corp.
vid_0d7e	American Computer & Digital Components	vid_1531	MICRODIA Ltd.
vid_0d8a	KING JIM CO., LTD.	vid_1532	Razer (Asia-Pacific) Pte Ltd.
vid_0d8c	C-MEDIA ELECTRONICS INC.	vid_1533	AEPTEC Microsystems, Inc.
vid_0d8d	Promotion & Display Technology Ltd.	vid_1534	Advanced Research Corporation
vid_0d8e	Global Sun Technology Inc.	vid_1535	Practical Engineering Incorporated
vid_0d8f	Pitney Bowes	vid_1536	NEONODE AB
vid_0d90	Sure-Fire Electrical Corporation	vid_1537	Power Up Manufacturing
vid_0d9c	Chee Chen Hi-Technology Co., Ltd.	vid_1538	IES Elektronikentwicklung
vid_0d9e	Avaya	vid_1539	AFG-Engineering GmbH
vid_0da1	Suzhou Peter's Precise Industrial Co., Ltd.	vid_153a	WMS Gaming Inc.
vid_0da7	IOGEAR, Inc.	vid_153b	ERCO Leuchten GmbH
vid_0db0	Micro Star International	vid_153c	Guger Technologies OEG
		vid_153d	Adam-Technologies
		vid_153e	abKey ptd ltd.
		vid_153f	UNIBRAIN S.A.
		vid_1540	Phihong Technology Co., Ltd.
		vid_1541	Better Light, Inc.
		vid_1542	Gemini Industries, Inc.
		vid_1543	Buxco Research Systems
		vid_1544	Alphamosaic Ltd.
		vid_1545	Kistler Instrumente AG
		vid_1546	u-blox AG
		vid_1547	S. Goers IT-Solutions
		vid_1548	Centrepoint Technologies

### 5.3 MSIEXEC Command-Line Options

Option	Parameters	Meaning
/i	Package ProductCode	Installs or configures a product.
/f	[p o e d c a u m s v] Package ProductCode	Repairs a product. This option ignores any property values entered on the command line. The default argument list for this option is 'omus.' This option shares the same argument list as the <a href="#">REINSTALLMODE</a> property. p - Reinstalls only if file is missing. o - Reinstalls if file is missing or an older version is installed. e - Reinstalls if file is missing or an equal or older version is installed. d - Reinstalls if file is missing or a different version is installed. c - Reinstalls if file is missing or the stored checksum does not match the calculated value. Only repairs files that have msidbFileAttributesChecksum in the Attributes column of the <a href="#">File</a> table. a - Forces all files to be reinstalled. u - Rewrites all required user-specific registry entries. m - Rewrites all required computer-specific registry entries. s - Overwrites all existing shortcuts. v - Runs from source and re-caches the local package. Do not use the v reinstall option for the first installation of an application or feature.
/a	Package	<a href="#">Administrative installation</a> option. Installs a product on the network.
/x	Package ProductCode	Uninstalls a product.
/j	[u m]Package or [u m]Package/tTransform List or [u m]Package/gLanguageID	Advertises a product. This option ignores any property values entered on the command line. u - Advertises to the current user. m - Advertises to all users of machine. g - Language identifier. t - Applies transform to advertised package.
/L	[i w e a r u c m o p v x + !]* Logfile	Writes logging information into a logfile at the specified existing path. The path to the logfile location must already exist. The installer does not create the directory structure for the logfile. Flags indicate which information to log. If no

		<p>flags are specified, the default is 'iwearmo.'</p> <ul style="list-style-type: none"> <li>i - Status messages.</li> <li>w - Nonfatal warnings.</li> <li>e - All error messages.</li> <li>a - Start up of actions.</li> <li>r - Action-specific records.</li> <li>u - User requests.</li> <li>c - Initial UI parameters.</li> <li>m - Out-of-memory or fatal exit information.</li> <li>o - Out-of-disk-space messages.</li> <li>p - Terminal properties.</li> <li>v - Verbose output.</li> <li>x - Extra debugging information. Only available on Windows Server 2003.</li> <li>+ - Append to existing file.</li> <li>! - Flush each line to the log.</li> <li>*** - Wildcard, log all information except for the v and x options. To include the v and x options, specify "/!*vx".</li> </ul>
/m	filename	<p>Generates an SMS status .mif file. Must be used with either the install (-i), remove (-x), administrative installation (-a), or reinstall (-f) options. The ISMIF32.DLL is installed as part of SMS and must be on the path. The fields of the status mif file are filled with the following information:</p> <ul style="list-style-type: none"> <li>Manufacturer - <u>Author</u></li> <li>Product - <u>Revision Number</u></li> <li>Version - <u>Subject</u></li> <li>Locale - <u>Template</u></li> <li>Serial Number - not set</li> <li>Installation - set by ISMIF32.DLL to "DateTime"</li> <li>InstallStatus - "Success" or "Failed"</li> <li>Description - Error messages in the following order: 1) Error messages generated by installer. 2) Resource from Msi.dll if installation could not commence or user exit. 3) System error message file. 4) Formatted message: "Installer error %i", where %i is error returned from Msi.dll.</li> </ul>
/p	PatchPackage[;patchPackage2...]	<p>Applies a patch. To apply a patch to an installed administrative image you must combine the following options:</p> <p>/p &lt;PatchPackage&gt;[;patchPackage2...]/a &lt;Package&gt;</p>
/q	n b r f	<p>Sets <u>user interface level</u>.</p> <ul style="list-style-type: none"> <li>q , qn - No UI</li> <li>qb - <u>Basic UI</u>. Use qb! to hide the Cancel button.</li> <li>qr - <u>Reduced UI</u> with no modal dialog box displayed at the end of the installation.</li> <li>qf - <u>Full UI</u> and any authored <u>FatalError</u>, <u>UserExit</u>, or <u>Exit</u> modal dialog boxes at the end.</li> <li>qn+ - No UI except for a modal dialog box displayed at the end.</li> <li>qb+ - Basic UI with a modal dialog box displayed at the end. The modal box is not displayed if the user cancels the installation. Use qb+! or qb!+ to hide the Cancel button.</li> <li>qb- - Basic UI with no modal dialog boxes. Please note that /qb+ is not a supported UI level. Use qb-! or qb!- to hide the Cancel button.</li> </ul> <p>Note that the ! option is available with Windows Installer 2.0 and works only with basic UI. It is not valid with full UI.</p>
/? or /h		<p>Displays copyright information for Windows Installer.</p>
/y	module	<p>Calls the system function DllRegisterServer to self-register modules passed in on the command line. Specify the full path to the DLL. For example, for MY_FILE.DLL in the current folder you can use:</p> <p>msiexec /y .\MY_FILE.DLL</p> <p>This option is only used for registry information that cannot be added using the registry tables of the .msi file.</p>
/z	module	<p>Calls the system function DllUnRegisterServer to unregister modules passed in on the command line. Specify the full path to the DLL. For example, for MY_FILE.DLL in the current folder you can use:</p> <p>msiexec /z .\MY_FILE.DLL</p> <p>This option is only used for registry information that cannot be removed using the registry tables of the .msi file.</p>
/c		<p>Advertises a new instance of the product. Must be used in conjunction with /t. Available starting with the Windows Installer version that is shipped with Windows Server 2003 and Windows XP SP1.</p>
/n	ProductCode	<p>Specifies a particular instance of the product. Used to identify an instance installed using the multiple instance support through a product code changing transforms. Available starting with the Windows Installer version shipped with Windows Server 2003 and Windows XP SP1.</p>

