
Appendix C PC 2001 Master Checklist

This appendix lists all requirements in PC 2001, including cross-references to related requirement numbers published in *PC 99 System Design Guide*.

Requirement numbering has evolved since the original design guide. In PC 2001, requirement identifiers are assigned according to an alphanumeric scheme. Each requirement has a permanent mnemonic and number combination, as follows:

mnemonic—item number.subitem

The *mnemonic* is a shorter version of the name for a technology. The following mnemonics are used in this edition of the system design guide:

Label	Reference
1394	IEEE 1394 bus
ATA	ATA and ATAPI interface
AUD	Audio technology
BTH	Bluetooth
BIOS	BIOS
CBUS	PCCard and CardBus
GRPH	Graphics adapters and controllers
IMAG	Imaging
INPT	Input devices
MOBL	Mobile computer
MOD	Modems
MON	Monitor technology
NET	Network connectivity
PC99A	PC 99 Addendum
PCI	PCI bus
PCIX	PCI-X
PRNT	Printers
SCSI	Small Computer System Interface (SCSI)
SMRT	Smart Card
STOR	Storage devices and controllers
SYS	PC system

Label	Reference
USB	USB bus
VID	Video technology
WORK	Workstation computer

The *item number* is an arbitrarily assigned, sequential number up to 4 digits with leading zeros. These numbers are determined by order of creation. Numbers are retired with an obsolete guideline and not reassigned. The *subitem* is a single-digit number to itemize any subguidelines.

Number	PC 99	Requirement Statement
SYS-0001	3.1	System performance meets PC 2001 minimum requirements
SYS-0001.1	3.1.1	System includes CPU and cache that meets PC 2001 minimum requirements
SYS-0001.2	3.1.2	System memory meets PC 2001 minimum requirements
SYS-0054	4.5	If implemented, system memory includes ECC memory protection
SYS-0001.3	3.1.3	APIC implemented and properly connected
SYS-0002	3.2	System design meets ACPI 1.0b specification and PC 2001 requirements
SYS-0002.1	3.2.2	System supports S3, S4, and S5 states
SYS-0002.3	3.2.5	System provides no user-accessible method for disabling ACPI in the BIOS
SYS-0002.4	3.2.6	If software fan control is implemented, thermal design and fan control comply with ACPI 1.0b
SYS-0002.5	3.2.7	All system-board power management or Plug and Play features comply with ACPI 1.0b
SYS-0003	3.3	Hardware design supports OnNow and Instantly Available PC initiatives
SYS-0003.1	3.3.1, 3.7	System and devices appear as off in the sleep state
SYS-0003.2	3.3.2	System provides one or more indicators to show whether the system is in the working or sleep state
SYS-0003.3	3.3.3	System provides software-controlled, ACPI-based power switch
SYS-0003.4	3.3.4	Each device and bus supports the power management specifications for its class
SYS-0003.5	3.3.5	System power supply provides standby power for system wakeup events
BIOS-0004	3.4	BIOS meets PC 2001 requirements for OnNow and Instantly Available PC support
BIOS-0004.1	3.4.1	BIOS supports Fast POST (S4, S5, or mechanical off)

Number	PC 99	Requirement Statement
BIOS-0004.2	3.4.2	Resume from sleep state (S1-S3) to operating system handoff occurs within 1 second
BIOS-0005	3.5	BIOS includes local boot support
BIOS-0005.1	3.5.2	BIOS supports booting the system from CD or DVD
BIOS-0005.2	3.5.7	BIOS provides boot support for USB keyboards and hubs
BIOS-0005.3		BIOS handles long descriptors read from USB device attached at boot time
BIOS-0005.4	3.49	Operating system recognizes the boot drive in a multiple-drive system
BIOS-0005.5		System timer is supported at system boot
BIOS-0006	3.55	BIOS supports SMBIOS 2.3
BIOS-0007	3.5.4	BIOS and CMOS properly accommodate dates
BIOS-0008	3.5.5	BIOS supports security
BIOS-0009	3.5.6	BIOS supports BIOS updates and revisions
BIOS-0010	3.5.8	System BIOS supports debug port
BIOS-0011	3.45	System BIOS and option ROMs support Int 13h Extensions
BIOS-0012		ROM BIOS interrupt handlers preserve values in all registers
BIOS-0014	3.5.3	BIOS supports remote boot
BIOS-0014.1	3.5.1	BIOS supports PXE
BIOS-0014.2	3.5.3	BIOS supports booting the system from the network and using F12 to force a system boot
BIOS-0014.2.1	3.5.3	BIOS allows boot devices to be configured in order of precedence for boot
BIOS-0014.2.2	3.5.3	Interface clearly shows boot order when users make configuration choices
BIOS-0014.2.3	3.5.3	F12 key forces a system boot initiated from the network adapter
BIOS-0014.3	3.5.1	System UUID is provided in print
BIOS-0014.4		BIOS supports BIS
BIOS-0014.5		System BIOS provides remote lockout capability
BIOS-0015		BIOS supports ACPI legacy-free reporting mechanism
BIOS-0016	9.14	BIOS does not configure I/O systems to share PCI interrupts
BIOS-0017	9.15	BIOS configures boot device IRQ and writes to the interrupt line register
BIOS-0018	10.6	System BIOS supports ATA

Number	PC 99	Requirement Statement
BIOS-0019	10.11	BIOS enumeration of all ATAPI devices complies with ATA/ATAPI-5
SYS-0020	3.8	System and component design practices follow accessibility requirements
SYS-0021	3.25	PC 2001 system includes USB with two user-accessible USB ports, minimum
SYS-0022	3.26	If IEEE 1394 is implemented, all components meet PC 2001 requirements
SYS-0023	3.27	System buses meet PC 2001 requirements
SYS-0024	12.1-12.23	If CardBus is implemented, all components meet PC 2001 guidelines
SYS-0025	3.11	Each device, device driver, and installation of either device or driver, meet PC 2001 requirements
SYS-0025.1	3.16.1	Driver installation does not interfere with other devices
SYS-0025.2	3.16.2	Devices with WDM support in Windows include WDM-based drivers
SYS-0025.3	3.16.3	Driver supports Plug and Play and power management IRPs
SYS-0025.4	3.16.4	All configuration settings are stored in the registry
SYS-0025.5	3.16.5	All INF and other file information is correct
SYS-0025.6	3.16.6	Installation uses methods defined in the DDK
SYS-0026	3.12	Each bus and device meets Plug and Play specifications
SYS-0027	3.13	Unique Plug and Play device ID provided for each system device and add-on device
SYS-0029	3.17	Minimal user interaction needed to install and configure devices
SYS-0029.1	3.17.1	The device is immediately functional without restarting the system
SYS-0029.2	3.17.2	Software settings are available for configuring all resources
SYS-0029.3	3.17.3	Dynamic disable capabilities are supported for all devices
SYS-0030	3.19	Hot-plugging capabilities for buses and devices meet PC 2001 requirements
SYS-0030.1	3.19.1	USB, IEEE 1394, and PC Card devices and buses support hot-plugging
SYS-0030.2	3.19.2, 9.16	System supports hot-plugging for any PCI devices that use ACPI-based methods
SYS-0030.3	3.19.3	All removable media support media status notification
SYS-0030.4	3.38	If implemented, system supports smart card specifications

Number	PC 99	Requirement Statement
SYS-0031	3.20, 19.37	If implemented, Device Bay components comply with Device Bay 1.0
SYS-0032	3.21	Multifunction device meets PC 2001 device requirements for each device
SYS-0032.1	3.21.1	Each enumerated device has a unique device ID
SYS-0032.2	3.21.2	Windows can separately access and configure each logical device
SYS-0032.3	3.21.3	Each enumerated device meets its own resource requirements
SYS-0032.4	3.21 (PC99A)	For PC 2001, separate drivers are required for separate functions
SYS-0032.5		There are no start order dependencies between drivers for separate functions
SYS-0032.6		Independent functions and devices can be used concurrently, with no hidden dependencies
SYS-0032.7		Each function and device can be power managed independently
SYS-0033	3.24	Each bus meets written specifications and PC 2001 requirements
SYS-0034		If implemented as an industry-standard riser card, the riser device subsystem complies with applicable standard Plug and Play requirements
SYS-0035	3.41	If DVD-Video playback is implemented, PC 2001 system provides video playback capabilities
SYS-0036	3.43	If video capture is implemented, analog video input and capture capabilities comply with PC 2001 requirements
SYS-0037		If Digital Video Interface is implemented, components comply with PC 2001 requirements
SYS-0038	3.48	PC 2001 system includes hard disk and controller
SYS-0039	3.34	PC 2001 system includes either CD or DVD drive and controller
SYS-0041	3.28	System does not include ISA expansion devices or slots
SYS-0042		Preinstalled components and upgrades do not require MS-DOS or legacy interfaces
SYS-0067	3.50	Secondary boot and upgrade capability is independent of FDC-based floppy disk drive
BIOS-0043		BIOS supports required interrupts
BIOS-0013		BIOS supports legacy removal
BIOS-0045		No legacy ports detected

Number	PC 99	Requirement Statement
SYS-0040	3.50	If implemented, floppy disk capabilities do not use legacy FDC
SYS-0047		A20M# is always de-asserted (pulled high) at the processor
SYS-0046		System supports legacy-free debug capabilities
SYS-0048	3.51	System supports WHIIG
SYS-0049	3.54	Expansion devices on desktop systems can be remotely managed
WORK-0051	4.1	Workstation system components meet minimum performance requirements
WORK-0051.1	4.2	System CPU speed is 700 MHz, minimum
WORK-0051.2	4.2	System has 256 KB of cache per processor, minimum, present and enabled
WORK-0051.3	4.2	System memory is 128 MB RAM, minimum
WORK-0051.4	4.4	RAM must be capable of expansion to 2 GB, minimum
WORK-0052	4.3	If implemented as a multiple processor system, the system must meet PC 2001 requirements
WORK-0052.1	4.3	The system must employ those processors symmetrically
WORK-0052.2	4.3	Each processor must have a separate cache
WORK-0052.3	4.5	The system memory and external processor cache are protected with error correction code (ECC) memory protection
WORK-0052.4	4.3	The system must comply with the ACPI 1.0b specification
WORK-0055		If implemented as a 64-bit system, PCI bus, bridges, and adapters support DAC command
WORK-0056	4.8	Workstation supports 64-bit I/O bus architecture if system includes 64-bit processors
SYS-0058		For 64-bit platforms, each device and driver meets PC 2001 device requirements
WORK-0059	4.10	Graphics subsystem supports workstation performance demands
WORK-0059.1		Workstation screen resolution meets minimum requirements
WORK-0059.4		If implemented, an AGP Pro Bus follows the AGP Pro 1.1 specification
WORK-0060	4.12	If implemented, multiple hard-drive system meet workstation PC 2001 performance requirement
PCIX-0129		If the workstation implements PCI-X, system and components comply with PCI-X 1.0

Number	PC 99	Requirement Statement
MOBL-0061	6.1	Mobile PC performance meets Mobile PC 2001 minimum requirements
MOBL-0061.1	6.1	Minimum 400 MHz processor
MOBL-0061.2	6.1	Minimum 128 KB of cache, present and enabled
MOBL-0061.3	6.1	64 MB of RAM, minimum
MOBL-0062	6.2	Mobile PC supports Smart Battery or ACPI Control Method battery
MOBL-0062.1	6.2.1	If implemented, Smart Battery meets PC 2001 requirements
MOBL-0062.2	6.2.2	If implemented, ACPI Control Method Battery meets PC 2001 requirements
MOBL-0063	6.5	Mobile PC includes at least one USB port
MOBL-0064	6.7	If implemented, Mobile PC includes compliant IEEE 1394
MOBL-0065	6.8	Mobile PC includes CardBus
MOBL-0066	6.9	Mobile PC keyboard and pointing device meet PC 2001 Mobile requirements
MOBL-0069	6.18, 6.22	Mobile PC meets PC 2001 Mobile graphics and video requirements
MOBL-0069.1		Mobile PC has integrated display
MOBL-0069.2		Mobile PC provides PC 2001 Mobile graphics capabilities
MOBL-0069.3	6.21	If implemented, external video connector meets mobile PC requirements
MOBL-0069.4	6.24	If implemented, TV output meets mobile PC requirements
MOBL-0070		Mobile PC includes PC 2001 hard disk as primary boot device
MOBL-0071	6.13	Communications capabilities meet Mobile PC 2001 requirements
MOBL-0072	6.16	If implemented, CD or DVD drive meets PC 2001 requirements
MOBL-0073	6.28	Docked mobile PC has the ability to identify the specific model of the dock and to uniquely identify the dock itself
MOBL-0074	6.30	Docked mobile PC combination meets PC 2001 Mobile requirements
MOBL-0075		Docking station includes driver support
MOBL-0076	6.33	Docked mobile PC meets PC 2001 BIOS requirements
MOBL-0077		Pre-PC 2001 docking station requirements
MOBL-0078	6.32	Mobile/docking station interface uses ACPI-defined mechanisms
MOBL-0079	6.34	Docking station supports warm docking

Number	PC 99	Requirement Statement
MOBL-0080	6.35	Docking system supports fail-safe docking
USB-0081	7.1, 7.3, 7.6, 7.8	USB system hardware and devices comply with USB specifications
USB-0084	7.5	USB devices and drivers support maximum flexibility of hardware interface options
USB-0084.1	7.5.1	Devices and drivers provide multiple alternate settings
USB-0084.2	7.5.2	Devices and drivers must not use isochronous bandwidth for alternate setting 0
USB-0085	3.2.4, 7.7	USB host controller and devices can wake the system
USB-0086	7.9	USB hubs are self-powered
USB-0087	7.10	USB bus, controllers, and devices comply with USB power management requirements
USB-0088	7.11	USB devices and drivers meet requirements in related USB device class specification
USB-0089		USB devices install without preloading software
1394-0090	8.1	System implementing IEEE 1394 supports mandatory features in IEEE 1394 standards
1394-0090.1	8.1	System provides IEEE 1394-1995/1394a interconnectivity
1394-0090.2	8.1	Systems implementing IEEE 1394 internal devices support mandatory features in the IEEE 1394a-2000 or IEEE P1394b amendments to IEEE 1394-1995
1394-0091	8.2	Host controller supports mandatory components of 1394 OHCI 1.1
1394-0092	8.4	Host controller supports minimum peak data rates specified in IEEE 1394 standards
1394-0093	8.24	If the IEEE 1394 implementation provides external connectivity, system must use only sockets specified by IEEE 1394-1995 and its amendments
1394-0094	8.6	Device command protocols conform to standard device class interfaces
1394-0095	8.7	Peak data rates for internal and external devices meet IEEE 1394 requirements
1394-0095.1		Internal devices support the standard IEEE 1394a-2000 Amendment data rates
1394-0095.2		External devices support IEEE 1394a-2000 data transfer rates
1394-0096	8.9	IEEE 1394 Plug and Play devices demonstrate interoperability with other devices
1394-0097	8.12	IEEE 1394 devices that initiate peer-to-peer communications provide a remote control interface

Number	PC 99	Requirement Statement
1394-0098	8.13	IEEE 1394 CSR provides unique device identification
1394-0099	8.14	IEEE 1394 device CSR space implements IEEE 1212-2000 format
1394-0100	8.18	IEEE 1394 CSR includes a unit directory for each independent device function
1394-0101	8.21	Vendor and model leafs support textual descriptor leaf format
1394-0102	8.36	Power Manager notified of device power state changes
1394-0103	8.38	Devices and controllers comply with all components of the 1394 Trade Association Power Specification
SCSI-0104		SCSI controller complies with SPI-3
SCSI-0105	11.1	PCI-based SCSI host controller supports bus mastering and virtual DMA services
SCSI-0106	11.2	Bootable SCSI controller supports El Torito No Emulation mode and Int 13h Extensions
SCSI-0108	11.5	Bus type is clearly indicated on connectors for all adapters, peripherals, cables, and terminators
SCSI-0109	11.6	Differential devices support DIFFSENS as defined in the SPI-3 Standard
SCSI-0110	11.7	Automatic termination circuit and SCSI terminators meet SPI-3 standard
SCSI-0111	11.8	Terminator power is supplied to the SCSI bus with overcurrent protection
SCSI-0111.1	11.8.1	Host adapter supplies terminator power
SCSI-0111.2	11.8.2	The circuit that supplies TERMPWR has built-in overcurrent protection.
SCSI-0113	11.18	SCAM support is disabled by default
SCSI-0114	11.20	SCSI controllers provide multi-initiator support
ATA-0115	10.1	ATA/ATAPI controllers comply with ATA/ATAPI-5 standards
ATA-0116	10.2	Bootable ATA controller supports El Torito No Emulation mode
ATA-0117	10.3	ATA controller supports Int 13h Extensions and Logical Block Addressing
ATA-0118	10.4	If implemented, dual ATA adapters use single FIFO with asynchronous access or dual FIFOs and channels
ATA-0119	10.7	Controller supports Ultra DMA (ATA/33)
ATA-0120	10.8	Controller and peripheral connections include Pin 1 cable designation with keyed and shrouded connectors

Number	PC 99	Requirement Statement
ATA-0121	10.17	ATA channel complies with device class power management reference specification
ATA-0122		Discrete PCI ATA controllers in mobile docking stations implement in PCI Native-Mode ATA
PCI-0123	9.1	All PCI components comply with PCI 2.2
PCI-0057		66-MHz and 64-bit PCI buses comply with PCI 2.2 requirements
PCI-0124	9.3	PCI-to-PCI bridges comply with the PCI-to-PCI bridge specification
PCI-0125	9.9	All PCI devices complete memory write transaction (as a target) within specified times
PCI-0126	9.11	PCI device IDs include Subsystem IDs
PCI-0127	9.13	PCI interrupt routing is supported using ACPI
PCI-0130	9.17	All PCI components comply with PCI Bus Power Management Interface specification
PCI-0130.1	9.17	All components correctly implement configuration space registers used for power management.
PCI-0130.2	9.17 (PC99A)	PCI add-on cards using 3.3V _{aux} operate correctly
PCI-0131	9.18	System provides support for 3.3V _{aux}
PCI-0132	9.20	PCI-based modem and network adapters support wakeup
BTH-0396		All Bluetooth Host controllers meet current Bluetooth specifications
BTH-0397		All Bluetooth Host controllers provide Plug and Play and revision information
BTH-0398		Peripherals equipped with Bluetooth wireless technology provide Plug and Play information
BTH-0399		Bluetooth peripherals support Windows class driver requirements
INPT-0133		All non-integrated USB human input devices meet USB HID specifications
INPT-0134	13.53	All PC 2001 input devices support Microsoft DirectInput and work simultaneously
INPT-0135	13.7	Devices use USB or external bus connections rather than legacy serial or parallel ports
INPT-0136	13.9	Serial port adapter meets device class specifications for its bus
INPT-0137	13.10	If implemented, legacy serial port is implemented as 16550A UART or equivalent and supports 115.2K baud
INPT-0138	13.13	Parallel port meets device class specifications for its bus

Number	PC 99	Requirement Statement
INPT-0139	13.14	If a legacy parallel port is implemented, flexible resource configuration is supported for each parallel port
INPT-0140	13.20	Daisy-chained legacy parallel port device is Plug and Play capable
INPT-0141	13.21	Pointing-device connection meets requirements for its bus class
INPT-0142	13.23	Keyboard connection meets requirements for its bus class
INPT-0143	13.24	No interference occurs between multiple keyboards
INPT-0144	13.25	If implemented, Windows and Application logo keys meet Microsoft requirements
INPT-0145		If implemented, Internet browser and multimedia keys use Microsoft APIs
INPT-0146	13.27	IR device uses NDIS 5.0 miniport driver
INPT-0147	13.28	IR device meets IrDA specifications
INPT-0148	13.32	System supports standard input speeds of 4 Mb/s
INPT-0149	13.33	System provides a separate, physically isolated transceiver for each IR protocol supported
INPT-0150	13.30	If a legacy IR port is implemented, flexible resource configuration is supported for each parallel port
IMAG-0151	22.26	Digital still image device with an IR interface uses the Windows Sockets interface
MOBL-0152	6.10	If implemented in a mobile PC, IR devices support power management
SMRT-0153	13.38	Smart card reader complies with ISO/IEC 7816
SMRT-0154	13.39	Smart card reader supports ISO 7816-3 T=0 and T=1 protocols
SMRT-0156	13.40	Smart card reader supports 258-byte packets in T=0 and 259-byte packets in T=1
SMRT-0155	13.41	Smart card reader supports inverse-convention smart cards
SMRT-0157	13.42	Smart card reader supports a smart card insertion/removal monitor
SMRT-0158	13.43	Smart card reader supports negotiable and specific modes
SMRT-0159	13.44	Smart card reader supports 3.5795 MHz minimum clock frequency
SMRT-0161	13.46	Smart card reader supports the Power Down command
SMRT-0162		If input device implements a PIN data-entry keyboard, it must comply with ISO 13491-1
GRPH-0163	14.1	Primary graphics adapter uses AGP or another high-speed connection
GRPH-0164	14.2	System provides hardware-accelerated 3-D graphics

Number	PC 99	Requirement Statement
GRPH-0165		If Digital Video Interface is implemented, it conforms to DVI specification
GRPH-0166	14.4	Primary graphics adapter works normally with default VGA mode driver
GRPH-0167	14.5	Adapter and driver support multiple adapters and multiple monitors
GRPH-0168	14.8	Screen resolution and graphics memory capacity meet PC 2001 minimum requirements
GRPH-0169	14.9	Adapter meets industry specifications for external display interface
GRPH-0170	14.10	All supported color depths are enumerated
GRPH-0171	14.11	Graphics operations use relocatable registers only
GRPH-0178	14.12	Adapter supports adjustable gamma correction
GRPH-0179	14.13	Adapter for external display supports Plug and Play monitor detection
GRPH-0180	14.20	Extended resources can be dynamically relocated after system boot
GRPH-0181	14.21	VGA resources can be disabled by software
GRPH-0182	14.22	Frame buffer can be accessed asynchronously by the CPU and graphics accelerator
GRPH-0183	14.24	Hardware supports transparent blter
GRPH-0184	14.25	Hardware provides support to prevent tearing
GRPH-0185	14.27	Hardware supports RGB rasterization
GRPH-0185.1	14.27.2	Textures
GRPH-0185.2	14.27.3	Alpha blending for 3-D graphics
GRPH-0185.3	14.27.4	Lighting and fogging
GRPH-0186	14.29	Hardware supports multitexturing
GRPH-0187	14.30	Hardware supports texture formats
GRPH-0188	14.31	Hardware complies with texture size limitations
GRPH-0189	14.33	Hardware supports Z comparison modes and Direct3D-compatible formats
GRPH-0190	14.37	If TV out is implemented, adapter supports overscan/underscan scaling
GRPH-0191	14.42	If TV out is implemented, software supports positioning
GRPH-0192	14.38	If TV out is implemented, adapter supports flicker filter
GRPH-0193	14.40	If TV out is implemented, adapter supports composite video or S-video connectors
GRPH-0194	14.41	If TV out is implemented, adapter also supports DVI or VGA and television output

Number	PC 99	Requirement Statement
GRPH-0195	14.45	Display devices do not use VGA BIOS POST to populate PCI SID
GRPH-0196	14.46	System supports conflict resolution, VGA compatibility, and extended registers
GRPH-0197	14.47	Chips support linear packed-pixel frame buffer, relocatable above 16 MB
GRPH-0198	14.48	Option ROM supports DDC2B
GRPH-0199	14.49	Onboard graphics device can be used as a system boot device
GRPH-0200	14.50	System BIOS supports large frame buffers for graphics adapters
GRPH-0201	14.52	Graphics device supports IRQ and correctly populates PCI BARs
GRPH-0202	14.53	System-board graphics device is not hidden from Plug and Play enumeration
GPPH-0203	14.54	Graphics adapter complies with device class power management reference specification
GRPH-0204	14.55	Graphics adapter complies with VBE/Core 2.0 extensions for power management
GRPH-0205	14.57	Driver does not bypass any Microsoft-provided system components
GRPH-0206	14.59	Driver supports dynamic color depth and resolution change
GRPH-0207	14.14	If support for TV or DVD-Video playback is implemented, hardware supports video overlay surface with scaling
GRPH-0207.1	14.14.1	Size
GRPH-0207.2	14.14.2	Screen resolutions
GRPH-0207.3	14.14.3	Color formats
GRPH-0207.4	14.14.4	Scaling
GRPH-0208		If support for TV or DVD-Video playback is implemented, colorspace conversion can be configured for different color primary standards
GRPH-0395	14.15	Hardware supports color keying for video
GRPH-0393	6.18	Mobile system meets mobile PC 2001 basic graphics requirements
GRPH-0393.1		Mobile system supports display resolution of at least 640 × 480 with 256 colors
GRPH-0393.2	6.23	Mobile PC system uses PCI or better interconnect
GRPH-0393.3	6.19	Optional 3-D capabilities meet minimum requirements

Number	PC 99	Requirement Statement
GRPH-0393.4	6.18	Mobile PC resolution requirements
GRPH-0393.5	6.18	Mobile PC refresh frequency requirements
GRPH-0393.6	6.21	Mobile PC requirements for Plug and Play support for external displays
GRPH-0393.7	6.20	Mobile PC multiple-monitor requirements
GRPH-0393.8	14.49	Mobile BIOS setup utility can force use of system-board graphics
GRPH-0394		All mobile systems meet basic interoperability requirements
VID-0209	15.1	System supports basic video capabilities
VID-0210	15.17	Video input, capture, and broadcast device support is based on DirectX foundation class and WDM Stream class or AV Stream class
VID-0211	15.48	All video implementations use DirectShow for video routing and processing
VID-0212	15.51	Dependent video device is not independently enumerated
VID-0213		If non-Microsoft provided DirectShow filters replace any filters included with the operating system, replacements provide a functional and qualitative superset of the replaced modules
VID-0215		All video implementations meet basic video quality requirements
VID-0215.1		TV-style video source frame and field rates must be preserved to memory and to the display
VID-0215.2		TV-style video source resolution must be preserved to memory and to the display
VID-0215.3		TV-style video source quality must be preserved to memory and display
VID-0215.4		TV-style video source color information must be preserved to memory and to the display
VID-0215.5		TV-style video source video aspect ratios are preserved and displayed correctly
VID-0215.6		TV-style MPEG-2 video stream playback consumes no more than an additional 45 percent of CPU measured during any given minute
VID-0215.7		TV-style MPEG-2 video stream playback consumes no more than an additional 45 percent of memory, PCI, or AGP bandwidth during any given minute
VID-0215.8		TV-style video stream playback is audio-video synchronized to within 75 ms

Number	PC 99	Requirement Statement
VID-0215.9		Video is made available through input or transform filters in the YUY2 color format while maintaining all other baseline video requirements
VID-0215.10		Displayed video that enters the system interlaced but carrying a tag that identifies how the video fields were derived from a progressive source will be deinterlaced using the weave method
VID-0215.11		Displayed video that enters the system interlaced but carries a tag identifying the video source as 24 fps film will be (in combination with weave deinterlacing) played back using a suitable frame rate increasing process such as 3:2 pulldown or better
VID-0215.12		Displayed video that enters the system interlaced and carries either no identifying tag or is tagged as interlaced material should be deinterlaced by the graphics subsystem using the bob method or a method superior to the bob method
VID-0215.13		When video is displayed on a monitor that is refreshed at a different rate than the field rates and frame rates of the video stream, a consistent frame repeat pattern must be implemented that in itself causes no frames to be dropped
VID-0216	15.14	If implemented, all MPEG-2 decoders can accept an MPEG-2 elementary stream
VID-0217	15.15	If implemented, all MPEG transport stream information is available to the central host processor
VID-0340		If implemented, MPEG decoders with motion compensation or Inverse DCT hardware acceleration use the Microsoft-provided DirectX VA API
VID-0218	15.24	If DVD-Video playback is implemented, DVD decoder driver correctly handles media types, time discontinuity, and decode-rate adjustment
VID-0219	15.25	If DVD-Video playback is implemented, DVD decoder supports subpicture compositing and closed captioning
VID-0220	15.26	If DVD-Video playback is implemented, subpicture decoder correctly handles subpicture properties and other functions
VID-0221	15.27	If DVD-Video playback is implemented, system supports seamless DVD-Video 1.0 navigation
VID-0222		If DVD-Video playback is implemented, DVD-Video player provides seamless DVD navigation
VID-0223	15.28	If DVD-Video playback is implemented, All DVD-Video decoders must support Line21 closed-caption data

Number	PC 99	Requirement Statement
VID-0224	15.32	If implemented, video input or capture device provides raw sampled VBI data to the host
VID-0225	15.37	If implemented, VBI capture oversamples VBI data exactly 4.7 or 5 times
VID-0226	15.39	If implemented, digital broadcast module can receive all streams contained in the particular transport stream
VID-0227	15.40	If implemented, digital broadcast module can receive full bandwidth from each frequency
VID-0228	15.41	If implemented, digital broadcast module can receive a minimum of 32 simultaneous elementary streams
VID-0229	15.47	If implemented, ATSC DTV tuner/demodulator complies with A/53
MOBL-0231	6.22	Mobile system meets mobile PC 2001 basic video requirements
MON-0232	16.1	Color monitor is E-DDC-compliant with unique EDID identifier
MON-0233	16.12	Monitor supports EDID 1.3 data structure
MON-0234		If implemented, LCD monitor or built-in LCD display contains display characterization data
MON-0235	16.2	Monitors support sRGB output or an ICC profile is provided
MON-0236		USB functionality does not interfere with monitor INF file
MON-0237	16.5	Monitor meets minimum graphics resolution, based on monitor size
MON-0238	16.7	CRT-based monitor synchronizes to a new format in less than three seconds
MON-0239	16.12	External monitor meets E-DDC and E-EDID standards
MON-0240	16.6	CRT-based monitor supports ergonomic timing standards
MON-0241		Digital display interface is DVI compliant
MON-0242		Digital monitor supports hot-plug detection
MON-0243	16.10	Digital monitor supports VESA VGA Text Mode 3 timings, 640 × 480 and 640 × 400
MON-0244	16.13	Analog monitor complies with device-class power management reference specification
AUD-0322	17.3	Audio device does not use legacy hardware interfaces for MS-DOS-based applications
AUD-0323		PC 2001 audio subsystem is digital ready
AUD-0324	17.5	Audio subsystem supports basic data formats
AUD-0325	17.6	Audio subsystem supports full duplex operation

Number	PC 99	Requirement Statement
AUD-0325.1	17.6.1	Full duplex operation is supported for all sampling rates supported by the hardware
AUD-0325.2	17.6.2	Independent selection of input and output sample rates
AUD-0325.3	17.6.3	Sample rates are time-synchronized
AUD-0326	17.8	Audio driver reports sample position for stream synchronization
AUD-0337	17.31	Audio meets PC 2001 requirements for WDM driver support
AUD-0327		If implemented, audio system provides 2-D and 3-D hardware acceleration according to PC 2001 requirements
AUD-0328	17.12	If implemented, audio system provides DLS acceleration according to PC 2001 requirements
AUD-0329	17.4	Audio meets PC 2001 minimum performance requirements
AUD-0330	17.13	Audio subsystem supports AEC reference inputs
AUD-0331	17.7	If implemented, analog microphone input meets PC 2001 jack and circuit requirements
AUD-0332	17.11	If implemented, close-speaking headset microphone meets PC 2001 performance requirements
AUD-0333	17.21	PCI device supports initiator, target, and block transfer
AUD-0334	17.22	PCI device supports efficient audio buffer management
AUD-0335	17.25	USB audio meets USB specifications
AUD-0336	17.29	Audio device complies with device class power management reference specification
AUD-0338	6.12	Audio-enabled mobile PC meets mobile PC 2001 audio performance requirements
AUD-0339	6.37	Docked mobile meets PC 2001 speaker selection requirements
STOR-0341	18.1	Storage components and optical devices support bus master capabilities
STOR-0342	18.2	Removable media devices support media status notification
STOR-0343	18.7	USB storage devices comply with the USB mass storage class specification
SCSI-0109	11.6	Differential devices support DIFFSENS as defined in SPI-3 standard
STOR-0345	11.12	External devices use automatic termination or an accessible termination switch
STOR-0346	11.22	Devices supports the STOP/START UNIT command as defined in the SBC standard

Number	PC 99	Requirement Statement
STOR-0347	10.9	Peripherals comply with ATA/ATAPI-5
STOR-0348	10.12	ATAPI devices support DEVICE RESET command
STOR-0349	10.18	ATA device supports ATA STANDBY command
STOR-0350	18.6	ATA devices support Ultra DMA
STOR-0352	18.17	CD or DVD drive is CD-Enhanced compatible
STOR-0353	18.18	CD or DVD drive supports specified logical and physical CD formats
STOR-0354	18.19	CD or DVD drive complies with MMC-2
STOR-0355	18.20	CD drive supports multisession and compatibility forms of the READ_TOC command
STOR-0356	18.21	CD or DVD changer complies with MMC-2
STOR-0357	18.22	CD or DVD device supports digital audio extraction with sector accurate reads
STOR-0360	18.25	DVD device provides 2 MB per second minimum transfer rate or better performance anywhere on the disc
STOR-0361	18.30	DVD drive supports defect management
STOR-0362	18.16	CD device provides 8x minimum transfer rate or better performance
STOR-0363	18.24	Block rewriteable optical ATAPI device complies with INF-8070i, version 1.2
STOR-0364	18.37	Device and controller comply with Storage Device Class Power Management Reference Specification
STOR-0365	18.42	Device driver for partitioned media supports all Windows Me and Windows 2000 partition types
MOD-0366	19.41	Modem driver supports Unimodem
MOD-0367	19.2	Modem meets PC 2001 controller requirements
MOD-0368	19.3	Modem supports V.250 AT command set
MOD-0369	19.4	Data modem meets PC 2001 protocol requirements
MOD-0370	19.7	Modem supports call control signaling, controlled using V.251 modem commands
MOD-0371	19.8	FAX modem supports 14.4 Kbps (V.17) with Class 1 command set
MOD-0372	19.9	If delayed and blacklisted number tables are implemented, modem generates appropriate error messages
MOD-0373	19.10	If TDD support is implemented, modem complies with TDD, meeting V.18-1996 with V.250 AT commands
MOD-0374	19.11	If voice modem is implemented, it supports ITU V.253 (AT+V)

Number	PC 99	Requirement Statement
MOD-0375	19.12	If implemented, V.253 modem supports duplex audio (+VTR)
MOD-0376	19.13	If Caller ID detection is implemented, modem supports Caller ID Reporting using +VCID and +VRID commands
MOD-0377	19.23	Modem can connect, stay connected, and successfully transfer data simultaneously
MOD-0378	19.24	Modem reliably connects numerous times on good telephone channels
MOD-0379	19.25	Modem pair functions concurrently with other applications
MOD-0380	19.36	All external modems support USB specifications
MOD-0381	19.38	Modem complies with device class power management reference specification
MOD-0382	19.39	Modem supports wakeup events
MOD-0383	19.26	Driver-based modem uses a WDM-based driver solution
MOD-0384	19.18	ISDN modem supports required command set
MOD-0385	19.20	ISDN modem supports asynchronous-to-synchronous conversion and RFC 1662
MOD-0386	19.15	If wireless support is implemented, Mobile PC modem supports +WS46 command
MOD-0387	19.16	If digital cellular control is implemented, Mobile PC modem supports appropriate +C digital cellular standards
MOD-0388		If short messaging services support is implemented, the modem supports appropriate +C SMS control commands
MOD-0389		System with telephony applications uses a common set of audio I/O devices for system audio and telephony applications
MOD-0390		Telephony applications provided with a PC 2001 system meet industry telephony performance requirements
NET-0245	20.7	Network adapter uses NDIS 5.0 miniport driver
NET-0246	20.10	Adapter automatically senses presence of functional network connection
NET-0247	20.11	Adapter automatically senses transceiver type
NET-0248	20.12	Adapter can transmit packets from buffers aligned on any boundary
NET-0249	20.13	Adapter communicates with driver across any bridge
NET-0250	20.50	Networking media supports IP
NET-0251	20.17	PCI-based network adapters are bus masters
NET-0252	20.8	NDIS 5.0 miniport driver is deserialized

Number	PC 99	Requirement Statement
NET-0253	20.9	Full-duplex adapter automatically detects and switches to full duplex mode
NET-0254	20.14	Adapter supports filtering for at least 16 multicast addresses
NET-0255	20.15	Adapter and driver support promiscuous mode
NET-0256	20.16	Adapter can be used as a boot device
NET-0257	20.20	Network adapter and driver supports priority for IEEE 802-style networks
NET-0258	20.21	Internal ISDN device meets PC 2001 network adapter requirements
NET-0259	20.22	Internal ISDN device supports synchronous HDLC framing
NET-0260	20.23	NDIS interface and driver support raw, unframed synchronous B channel I/O
NET-0261	20.24	ISDN driver supports unattended installation, with limitations
NET-0262	20.26	ISDN device includes software-selectable terminating resistors
NET-0263	20.28	Integrated cable modem meets PC 2001 network adapter requirements
NET-0264	20.29	Integrated cable modem exposes an ATM or Ethernet interface
NET-0265	20.30	ATM adapter meets PC 2001 network adapter requirements
NET-0266	20.31	ATM adapter supports a minimum number of simultaneous connections
NET-0267	20.33	ATM adapter supports UBR service type
NET-0268	20.34	ATM adapter supports a minimum number of simultaneously active VBR or CBR connections
NET-0269	20.35	ATM adapter supports traffic shaping
NET-0270	20.36	ATM adapter enforces PCR on UBR virtual circuits
NET-0271	20.37	ATM adapter and driver support dynamic link speed configuration
NET-0272	20.38	ATM adapter that supports OAM responds to F4 and F5 loopback cells
NET-0273	20.41	Integrated ADSL modem meets PC 2001 network adapter requirements
NET-0274		DSL modem supports G.994.1
NET-0275		CAP/QAM ADSL modem supports T1 TR-59
NET-0276	20.43	DMT ADSL modem supports G.992.2

Number	PC 99	Requirement Statement
NET-0278		Wireless networking media adapters support wireless extensions to NDIS
NET-0279		IEEE 802.11 wireless networking adapters support industry specifications
NET-0280	20.45	Infrared device meets PC 2001 network adapter requirements
NET-0281	20.46	Infrared device supports both FIR and SIR
NET-0282	20.47	IrDA hardware supports unattended driver installation
NET-0283	20.48	If implemented, home networking adapter meets PC 2001 network adapter requirements
NET-0284		Network adapter that supports HomeRF complies with SWAP specification
NET-0285		If implemented, network adapter that supports HomePNA complies with 1.0 specification.
NET-0286	20.53	Plug and Play capabilities support multiple adapters
NET-0287	20.54	All resource settings are reported in the user interface
NET-0288		External networking devices support standard control interfaces
NET-0289	20.55	Adapter complies with network power management specification
NET-0290	20.56	Network device supports wakeup events
NET-0291	20.58	Driver works correctly with Microsoft network clients and protocols
NET-0292	20.59	NDIS miniport driver makes only NDIS library calls or WDM system calls
NET-0293	20.60	NDIS 5.0 driver uses Windows 2000 INF file format
PRNT-0294		Device uses USB, IEEE 1394, or network interface port connection
PRNT-0295	21.8	Network printer supports standard port monitor
PRNT-0296		Device with IEEE 1284.4 capabilities complies with specification
PRNT-0297		MFP devices correctly implement multifunction support
PRNT-0298	21.11	Printer INF file and installation meet PC 2001 requirements
PRNT-0299	21.12	Driver correctly reports device capabilities
PRNT-0300	21.14	Driver supports sRGB output or an ICC profile is provided
PRNT-0301		Color printer complies with Windows Color Quality Specifications
PRNT-0302	21.15	Port monitor software meets DDK requirements

Number	PC 99	Requirement Statement
PRNT-0303	21.16	Driver supports point-and-print network installation
PRNT-0304	21.17	Device is available immediately following installation
PRNT-0305	21.18	Device supports accurate printable regions
PRNT-0306	21.19	Driver supports required DDIs
PRNT-0307		Printer driver does not run in kernel mode
PRNT-0308		Printer device and driver support Default Device-class Power Management Specification
IMAG-0309	22.1	Digital still camera uses PC 2001 compatible port connection with USB or IEEE 1394 connection
IMAG-0310	22.3	Driver supports sRGB output or an ICC profile is provided
IMAG-0311	22.9	USB device meets USB imaging device class specifications
IMAG-0312	22.12	Still image devices meet minimum throughput requirements
IMAG-0313	22.14	Digital camera uses PC-compatible file system for removable storage
IMAG-0314	22.15	Digital camera stores images in JPEG-compressed file format
IMAG-0315		Still image devices deliver accurate image information
IMAG-0316		USB camera firmware supports PIMA 15740 protocol
IMAG-0317	22.23	Driver support implements the WIA driver architecture
IMAG-0318	15.52	Digital still cameras that stream video require WDM Stream class drivers
IMAG-0319	22.25	If TWAIN datasources are provided, device driver supports TWAIN 1.7
IMAG-0321	22.27	Scanners with an IEEE 1394 interface uses SBP2Port