IBM Personal Computer Family

A Technical Guide to PC 340 6560

Bob Beck

UK Technical Product Management

IBM PC Company

Version 1.00

Date 25/07/96

1 Disclaimer

Information in this document was developed in conjunction with use of the equipment specified, and is limited in application to those specific hardware and software products and levels.

The information contained in this document has not been submitted to any formal IBM test and is distributed as is.

The use of this information or the implementation of any of any of the advice contained within this document is a Customer responsibility and depends on the Customer's ability to interpret and integrate it into the Customer's operational environment.

While each item may have been reviewed by IBM for accuracy in a specific situation, there is no guarantee that the same or similar results will be obtained elsewhere.

Customers attempting to adapt these techniques to their own environments do so at their own risk.

IBM may have patents or pending patent applications covering subject matter in this document.

The furnishing of this document does not give you any license to those patents.

2 Trademarks

The following terms are trademarks of Cirrus Logic Inc:

- Cirrus

The following terms are trademarks of the IBM Corporation

- IBM
- PS/2
- ValuePoint

The following terms are trademarks of Intel Corporation

- i486
- OverDrive
- Pentium
- Plug 'n Play

The following terms are trademarks of Microsoft Corporation:

- Windows

The following terms are trademarks of the Video Electronics Standards Association:

- VESA

All other trademarks acknowledged.

3 Purpose of this Document

The aim of this document is to make technical information for the PC 340 6560 product range readily available to:

- IBM's Customers
- IBM's Business Partners
- IBM employees

The guide begins with an overview of the pre-configured model range.

The subsequent chapters then describe the mechanical packaging and the hardware subsystems of the PC 340 6560 models.

Following that, the more generic subjects such as power management, security, setup and configuration are covered.

4 Introduction

PC 340 6560 systems supplement the existing PC 330 and PC 350 systems by offering a 4 bay x 4 slot configuration.

In common with the recently announced PC 330 6577 and PC 350 6587 systems, they further fulfil the aim of the PC 300 range to offer the best value in the PC industry through performance, function, price, service, warranty and quality.

5 Pre-configured Models

The PC 340 6560 range is presently structured around the pre-configured models shown below.

Currently Available PC 340 6560 Pre-configured Models

Model	Description	Processor	Memory		Fixed Disk		Preloaded Operating System	Chassis	Expansion Bus	Part Number
			RAM	Cache	Type	Size				
6560-17A	PC 340 P100	Pentium 100	8MB E	none	IDE	850MB	Win 3.1	4x4	PCI/ISA	30241xx
6560-17M	PC 340 P100	Pentium 100	16MB E	none	IDE	850MB	Win 3.1	4x4	PCI/ISA	30242xx
6560-1XT	PC 340 P100 CDx6	Pentium 100	16MB E	none	IDE	1.2GB	Win 95	4x4	PCI/ISA	30127xx
6560-17S	PC 340 P100	Pentium 100	8MB E	none	IDE	850MB	Win 95	4x4	PCI/ISA	30236xx
6560-17T	PC 340 P100	Pentium 100	16MB E	none	IDE	850MB	Win 95	4x4	PCI/ISA	30237xx
6560-1XM	PC 340 P100 CDx6	Pentium 100	16MB E	none	IDE	1.2GB	Win 3.1	4x4	PCI/ISA	30240xx
6560-77T	PC 340 P133	Pentium 133	16MB E	none	IDE	850MB	Win 95	4x4	PCI/ISA	30234xx
6560-77A	PC 340 P133	Pentium 133	8MB E	none	IDE	850MB	Win 3.1	4x4	PCI/ISA	30243xx
6560-77S	PC 340 P133	Pentium 133	8MB E	none	IDE	850MB	Win 95	4x4	PCI/ISA	30238xx
6560-77M	PC 340 P133	Pentium 133	16MB E	none	IDE	850MB	Win 3.1	4x4	PCI/ISA	30239xx
6560-7XM	PC 340 P133 CDx6	Pentium 133	16MB E	none	IDE	1.2GB	Win 3.1	4x4	PCI/ISA	30156xx
6560-7XT	PC 340 P133 CDx6	Pentium 133	16MB E	none	IDE	1.2GB	Win 95	4x4	PCI/ISA	30235xx

Note that all PC 340 6560 systems utilise a common 4x4 mechanical package design.

This is described in detail in the following section.

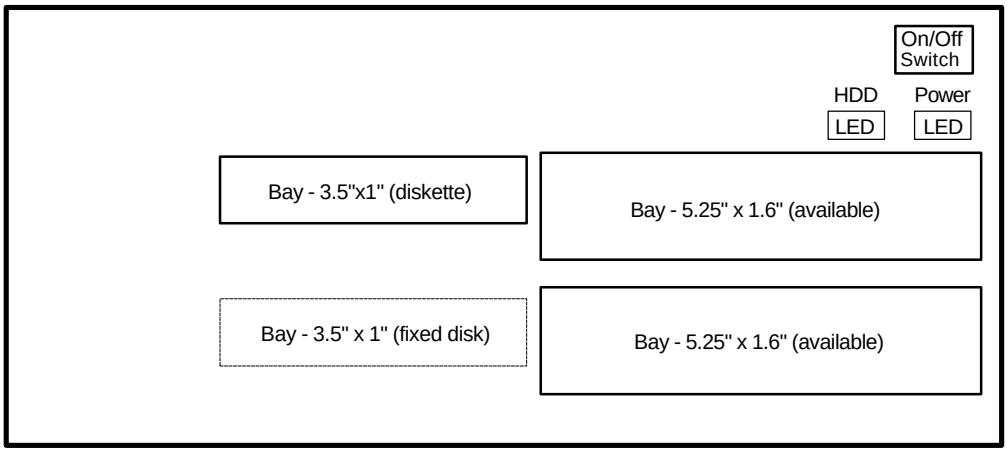
6 System Unit Design

The PC 340 6560 models share a single 4x4 packaging configuration that is new to the IBM PC 300 product range:

The 4x4 configuration offers the following features:

- 4 slots
  - 1 x PCI - full length
    - Available
  - 1 x PCI/ISA shared - 3/4 length
    - Available
  - 1 x ISA - full length
    - Available
  - 1 x ISA - half length
    - Available
- 4 bays
  - One front access 3.5" x 1" bay
    - Occupied by diskette drive
  - One hidden 3.5" x 1" bay
    - Occupied by primary hard disk drive
  - Two front access 5.25" x 1.6" bays
    - Pre-configured CD-ROM models have the top bay occupied by the CD-ROM drive

The bay layout of the 4x4 chassis is shown schematically below.



Front View of PC 340 System

Note that the top cover removal procedure is rather different from that required for 3x3 and 5x5 configurations.

PC 340 systems have a release screw located on the rear panel.

Once removed, this allows the top cover to be drawn forward about one inch and then lifted off vertically.

7 Highlights

Main features to note include:

- Choice of Pentium Processors
  - P100 or P133
  - Processor Upgradability via ZIF socket
- Optional 256KB L2 Cache
- 128MB Planar RAM Capability
- High Performance PCI Local Bus Graphics
- Fast PCI Local Bus EIDE Peripheral Controller
  - Supports up to four devices
  - Supports Bus Mastering Mode 5
- Flash BIOS
- Advanced Power Management
  - Standby
- Comprehensive Preload
  - PC DOS 7.0/Windows 3.1
  - Windows 95

These features are discussed in turn in the following sections.

8 System Board Layout

This section begins by illustrating the system board layout and also provides a jumper/switch setup summary.

The PC 340 6560 range of systems share a single system board that is based around the SIS 551x PCI core chipset for Pentium.

This chipset is comprised of three chips, each labelled as follows:

- SIS5511

  This chip incorporates the PCI controller and the cache/memory controller.

- SIS5512

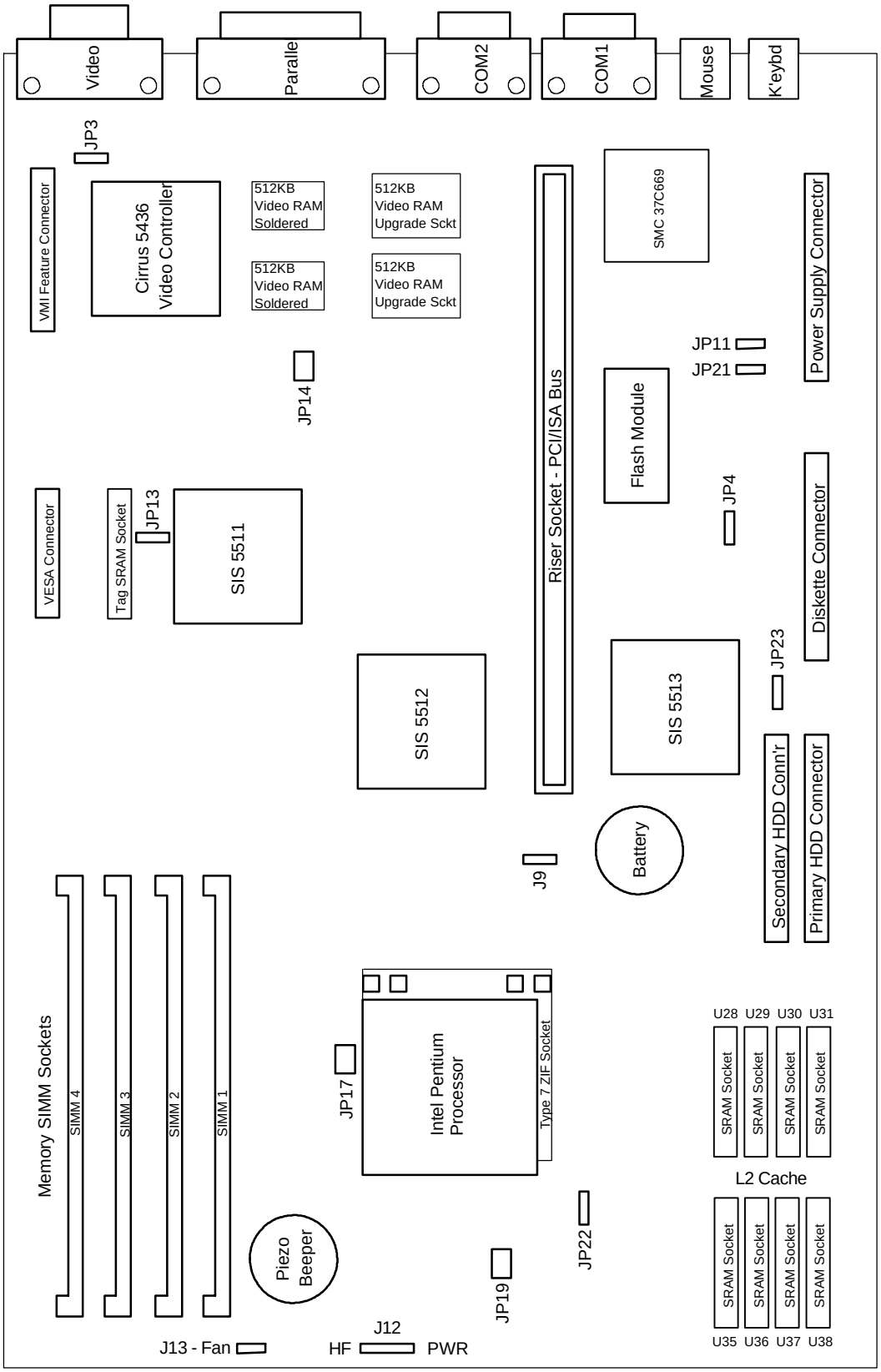
  This chip provides accelerated data buffering between processor, memory and hard disk to improve overall system performance.

- SIS5513

  This chip provides PCI to ISA bridge, the DMA controller, the interrupt controller and the EIDE controller.

The processor, the graphics controller and the EIDE controller all reside on the system board PCI bus with the I/O controller (SMC 669) residing on the ISA bus.

The locations of the principal subsystem controllers, sockets, connectors, jumpers and I/O ports for the PC 340 6560 system board are shown overpage.



PC 340 6560 System Board Layout

PC 340 6560 systems use jumper blocks for setup purposes:

The system board jumper setup for PC 340 6560 systems is shown below.

PC 340 6560 System Board Jumper Setup	
Identifier	**Purpose & Setup**
JP14, JP17	CPU/External Bus Speed jumpers 100/66; place jumpers so that JP14 has pins 1&2 and 3&4 shorted and JP17 has pins 1,2,3,4 UN-shorted 133/66; place jumpers so that JP14 has pins 1&2 and 3&4 shorted and JP17 has pins 1&2 shorted and pins 3&4 UN-shorted
JP13	L2 Cache Size jumper If 0Kb or 256KB of cache is installed, place the jumper so that it covers pins 1&2 If 512KB of cache is installed, place the jumper so that it covers pins 2&3
JP3	System Board Video Disable jumper To enable system board video, place the jumper so that it covers both pins (default) To disable system board video, place the jumper so that it only covers one pin
JP11	Flash Program Enable jumper To prevent the flash ROM from being updated, place the jumper so that it covers both pins To allow flash ROM to be updated, place the jumper so that it covers only one pin (default)
J9	Clear CMOS jumper Normal - place the jumper so that it covers pins 1&2 (default) Clear CMOS - place the jumper so that it covers pins 2&3
J4	Mouse Disable Jumper
	To enable mouse control, place the jumper so that it covers both pins (default)
	To disable mouse control, place the jumper so that only one pin is covered
JP21	Floppy Write Protect To prevent writing to a diskette, place the jumper so that it covers only one pin To allow writing to a diskette, place the jumper so that it covers both pins (default)

Warning: Do not overclock your processor. It may fail prematurely, or give spurious errors, or yield inaccurate results that may pass undetected.

9 Graphics Controller

The PC 340 6560 models feature, as standard, a system board PCI local bus implementation of the Cirrus 5436 graphics controller chip together with 1MB (upgradable to 2MB) of 16 bit 60ns EDO Video DRAM soldered onto the system board.

The display modes of the PC 340 6560 models are shown below.

Display Modes of PC 340 6560 Models

Resolution	Colours	Refresh Rate (Hz)	Video RAM Required (MB)
640x480	256	60/72/75/85	1
	64K	60/72/75/85	1
	16M	60/72/75/85	2
800x600	16	60/72/75	1
	256	60/72/75	1
	64K	60/72/75	1
	16M	60/72/75	2
1024x768	16	43i/60/70/72/75	1
	256	43i/60/70/72/75	1
	64K	43i/60/70/75	2
1280x1024	16	43i/60/72/75	1
	256	43i/60/72/75	2
1600x1200	256	49i	2

10 Processor

The PC 340 6560 model range utilises the following Pentium processors:

- Pentium 100
- Pentium 133

Both of these processors require 3.3v operation.

10.1 Upgradability

Prior to upgrading your processor, ensure that you are at the latest BIOS level. The only supported processor upgrade path for PC 340 6560 systems is the installation of a Pentium Overdrive P24CT processor upgrade device.

The Overdrive upgrade is inserted into the processor ZIF socket in place of the Pentium 100 or 133 processor already installed.

All PC 340 6560 systems use a type 7 ZIF socket.

11 Level 2 Cache

PC 340 6560 models may be ordered either cacheless (standard) or with 256KB of Write-Back direct-mapped asynchronous L2 cache (optional).

The supported L2 cache configurations are:

- 0KB

  All L2 cache sockets empty.

- 256KB

  This configuration comprises 8 x 32KB 15ns data SRAMs plus 1 x 32KB 15ns TAG SRAM.

- 512KB

  A 512KB cache configuration may be obtained by installing 8 x 64KB data SRAMs plus a matching TAG SRAM.

  Presently, a 512KB L2 cache option for PC 340 6560 is unavailable from IBM.

Note: Jumper JP13 must be set correctly to inform the system of the amount of cache installed.

12 Memory

PC 340 6560 models feature 4 tin/lead SIMM sockets that support the installation of 72 pin 60ns EDO tin/lead memory SIMMs in the following sizes; 4MB, 8MB, 16MB, and 32MB, to provide a maximum of 128MB of system board memory.

Gold tab SIMMs must not be installed into PC 340 6560 systems. Otherwise, metal migration will occur over time between the gold SIMM tab and the tin-lead SIMM socket. This migration progressively degrades the contact integrity to the point where it will eventually cause unreliable operation.

Warning: SIMM sockets 1 and 2 must always contain a pair of memory SIMMs.

Warning: Memory SIMMs must be installed in matched pairs for PC 340 6560 systems.

Warning: 72 pin 60ns parity/non-parity memory, all types of 72 pin 70ns memory, all SIMMs having gold contacts, and IBM PS/2 dual-RAS memory are not supported in PC 340 6560 systems.

13 Peripheral Controller

PC 340 6560 systems feature, as standard, a system board PCI local bus implementation of the SIS 5513 EIDE controller. This provides two dual channel interfaces supporting up to four devices, i.e. one master plus one slave per connector. Both interfaces support PIO modes 0 through 3 plus bus mastering modes 4 and 5, as well as AT API CD-ROM.

In modes 4 and 5 the controller supports *bus mastering.* This reduces processor overhead and enables a maximum data transfer rate of 16MB/s and 22MB/s respectively.

Note that new device drivers will be required to exploit bus mastering - though of course existing drivers will work normally in the meantime. Also, the highest available bus mastering mode will be the lowest common denominator between the capabilities of the controller, the driver and the hard disk drive. PC 340 6560 systems are presently supplied with mode 4 hard disk drives, meaning that the highest available mode is mode 4. This gives a maximum data transfer rate of 16MB/s.

Bus mastering brings to IDE some advanced features until now associated with SCSI, such as overlapped and queued I/O. This is of most benefit to multitasking operating systems (OS/2 Warp, Windows 95 and Windows NT) since the disk subsystem can independently process complex I/O operations while the CPU is executing other tasks.

14 Floppy Drive & Keyboard/Mouse/Parallel/Serial Port Controller

All I/O through the keyboard port, mouse port, parallel port, both serial ports and the diskette drive is handled by the SMC 37C669 Super I/O controller chip.

The 37C669 device incorporates:

- Industry standard diskette drive controller:
  - 16 byte FIFO.
  - 1.44MB drive compatible.
  - Maximum of two drives supported.
- Integrated 8042 compatible keyboard/mouse controller.

  Supported modes (set via F1 Setup):
  - Enabled.
  - Disabled.
- Bidirectional parallel port.

  Supported modes:
  - Standard Parallel Port (SPP - IBM / Centronics).
  - Enhanced Parallel Port (EPP).
  - Extended Capabilities Port (ECP).
  - Disabled.
- Two Type 2 high speed buffered UART NS16C450/PC16550A-compatible 9 pin serial ports.

  Supported modes:
  - Primary / COM1
  - Alternate / COM2
  - Disabled
- *Integrated Real Time Clock:*
  - 146818 compatible
  - Accurate to within +/- 13 minutes per year (approx).
  - 100 year calendar.

The two serial ports each have a 9 pin connector type.

If you need to attach a serial device that does not have a 9 pin connector then please order the 9-to-25 pin serial adapter cable, P/N 68X3873.

14.1 Keyboard Port & Mouse Port Pinouts

The keyboard port and mouse ports use six pin mini-DIN connectors.

The keyboard port is designed to accept the standard and enhanced PS/2 keyboards.

The keyboard/mouse port pinout assignments are as follows:

Pin 1 - Data

Pin 2 - Reserved

Pin 3 - Ground

Pin 4 - +5v DC

Pin 5 - Clock

Pin 6 - Reserved

15 BIOS

PC 340 6560 models utilise BIOS that was developed by IBM.

The BIOS includes the IBM Setup utility. This is a menu driven utility that enables you to configure your hardware. To do this, select F1 during the POST memory count.

BIOS resides in flash ROM located on the system board.

The use of flash ROM enables the BIOS level of these machines to be conveniently updated from diskette as new BIOS levels are released.

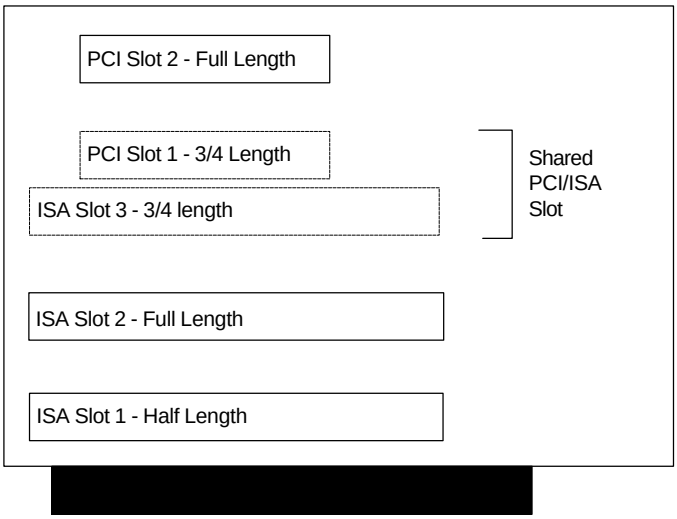
To do this, cold boot the machine from the BIOS update diskette and select the option to upgrade.

It is possible to flash the wrong BIOS onto your system so care must be taken in ensuring that you select the correct flash BIOS for you machine. Please refer to section 24 for guidance.

16 Expansion Slots

All PC 340 6560 systems share the same 4 slot riser card.

The slots are arranged as shown schematically below.



Side View of 4 Slot Riser Card for PC 340 6560

Note: The 3.3v PCI connector is located on back side of the riser card.

Where a socket-pair is described as "shared" only one or the other can be occupied by an adapter. The reason is purely one of physical space constraint and access. There is no electrical connection between shared sockets.

Since the system board provides both ISA and PCI signals to the riser card socket, no logic chips are required on the riser card itself.

17 Power Supply

PC 340 6560 systems utilise a 145W power supply.

Both supplies convert world-wide voltages into four DC voltage levels, +5v, +12v, -12v and -5v.

The world-wide voltages are covered in two ranges, 100-125v and 200-240vac 50-60Hz.

Each voltage range is selectable through the use of a manual switch.

18 Options Support

This chapter indicates the support position for using various options, such as monitors, memory, storage media, expansion adapter cards and dongles, with the PC 340 6560 systems.

18.1 Monitors

This section summarises the monitor option support position for PC 340 6560 systems.

PC 340 6560 Monitor Support	
Display Option	**Support Position**
2215 Colour Monitors	Yes
2248 Colour Monitors	Yes
2262-015 Colour Monitors	Yes
2264 Colour Monitors	Yes
PS/ValuePoint Colour Monitor 631x	Yes
IBM 6321-001/003/004/011/013/014 Colour Monitors	No
IBM 6322-002/022 Colour Monitor	Yes
IBM 6324 Colour Monitor	No
IBM 6325 Colour Monitor	No
IBM 6327-001/002/004/023 Colour Monitors	Yes
IBM PS/2 Monitors 8511/8512/8513/8518 (VGA only)	No
IBM PS/2 Monitors 8514/8515 (VGA + 1024x768int)	No
IBM PS/2 Monitors 8516 (VGA + 1024x768int touch)	No
IBM PS/2 Mono Monitor 8503/4 (VGA only)	No
IBM PS/2 Monitors 951x Family	No
IBM Colour Monitors 952x	Yes
IBM 9052-V01 10.4" TFT LCD Colour Monitor	No
IBM 6542 G40/G41 Colour Monitors	Yes
IBM 6543 G50 Colour Monitors	Yes
IBM 6544 G70 Colour Monitors	Yes
IBM 6545 G200 Colour Monitors	Yes
IBM 6553 P50 Colour Monitors	Yes
IBM 6554 P70 Colour Monitors	Yes
IBM 6555 P200 Colour Monitors	Yes
IBM 6556 P201 Colour Monitors	Yes

18.2 Memory

This section summarises the memory option support position for PC 340 6560 systems.

PC 340 6560 Memory Support		
Memory Option	**Option Number**	**Support Position**
16MB Memory DIMM 60ns (EDO, GOLD)	92G7334	No
32MB Memory DIMM 60ns (EDO, GOLD)	93G7335	No
16MB Memory DIMM 60ns (Parity, GOLD)	92G7338	No
32MB Memory DIMM 60ns (Parity, GOLD)	92G7339	No
2 x 8MB Memory SIMMs 60ns (non-parity, TIN-LEAD)	OCF16NY	No
2 x 16MB Memory SIMMS 60ns (non-parity, TIN-LEAD)	OCF32NY	No
2 x 4MB Memory SIMMs 60ns (EDO, TIN-LEAD)	92G7318	Yes
2 x 8MB Memory SIMMs 60ns (EDO, TIN-LEAD)	92G7320	Yes
2 x 16MB Memory SIMMs 60ns (EDO, TIN-LEAD)	92G7322	Yes
2 x 32MB Memory SIMMs 60ns (EDO, TIN-LEAD)	92G7324	Yes
2 x 4MB Memory SIMMs 60ns (Parity, TIN-LEAD)	92G7308	No
2 x 8MB Memory SIMMs 60ns (Parity, TIN-LEAD)	92G7310	No
2 x 16MB Memory SIMMs 60ns (Parity, TIN-LEAD)	92G7312	No
2 x 32MB Memory SIMMs 60ns (Parity, TIN-LEAD)	92G7317	No
4MB Memory SIMM 70ns (non-Parity, TIN-LEAD)	O70T04Y	No
8MB Memory SIMM 70ns (non-Parity, TIN-LEAD)	O70T08Y	No
16MB Memory SIMM 70ns (non-Parity, TIN-LEAD)	O70T16Y	No
32MB Memory SIMM 70ns (non-Parity, TIN-LEAD)	pending	No
4MB Memory SIMM 70ns (non-Parity, GOLD)	O70N04Y	No
8MB Memory SIMM 70ns (non-Parity, GOLD)	O70N08Y	No
16MB Memory SIMM 70ns (non-Parity, GOLD)	O70N16Y	No
32MB Memory SIMM 70ns (non-Parity, GOLD)	O70N32Y	No
4MB Memory SIMM 70ns (Parity, GOLD)	73G3131	No
8MB Memory SIMM 70ns (Parity, GOLD)	070PS8Y	No
16MB Memory SIMM 70ns (Parity, GOLD)	60G1622	No
32MB Memory SIMM 70ns (Parity, GOLD)	070P32Y	No
128KB L2 Cache	OM2128Y	No
256KB L2 Cache	OMC256Y	No
256KB L2 Cache (upgade for cacheless PC 300 6576/6586 models)	OR256CM	No
256KB L2 Cache	76H0236	Yes
512KB L2 Cache	92G7336	No
1MB L2 Cache	OMC1MBY	No
1MB VRAM Upgrade-60ns	OMV1MBY	Yes

The supported memory DIMM/SIMM combinations for PC 340 6560 systems are shown below.

Note that SIMMs must be installed in matched pairs.

Supported Memory SIMM Combinations for PC 340 6560				
Total Memory	**SIMM1**	**SIMM2**	**SIMM3**	**SIMM4**
8MB	4MB	4MB	-	-
16MB	8MB	8MB	-	-
16MB	4MB	4MB	4MB	4MB
24MB	8MB	8MB	4MB	4MB
24MB	4MB	4MB	8MB	8MB
32MB	16MB	16MB	-	-
32MB	8MB	8MB	8MB	8MB
40MB	16MB	16MB	4MB	4MB
40MB	4MB	4MB	16MB	16MB
48MB	16MB	16MB	8MB	8MB
48MB	8MB	8MB	16MB	16MB
64MB	16MB	16MB	16MB	16MB
64MB	32MB	32MB	-	-
72MB	32MB	32MB	4MB	4MB
72MB	4MB	4MB	32MB	32MB
80MB	32MB	32MB	8MB	8MB
80MB	8MB	8MB	32MB	32MB
96MB	32MB	32MB	16MB	16MB
96MB	16MB	16MB	32MB	32MB
128MB	32MB	32MB	32MB	32MB

18.3 Storage Media

This section summarises the storage media option support position for PC 340 6560 systems.

PC 340 6560 Storage Media Support		
Media Option	**Option Number**	**Support Position**
IBM 1.44MB 3.5" Diskette Drive	0F3144Y	Yes
IBM 1.2MB 5.25" Diskette Drive	0F5120Y	Yes
IBM Enhanced 2.88MB 3.5" Diskette Drive	OF3288Y	No
IBM 270MB IDE Hard File	0AT270Y	Yes
IBM 364MB IDE Hard File	0AT364Y	Yes
IBM 527MB IDE Hard File	OAT527Y	Yes
IBM 540MB IDE Hard File	0AT527Y	Yes
IBM 540MB IDE Hard File	O4A540M	Yes
IBM 728MB IDE Hard File	OAT728Y	Yes
IBM 1GB IDE Hard File	OAT1GBM	Yes
IBM ValuePoint IDE Hardfile Cable	06H3610	Yes
IDE Internal 2x CD-ROM Drive	OCDII6Y	Yes
IDE Internal 4x CD-ROM Drive	OCI4XIM	Yes
IDE Internal 6x CD-ROM Drive	07H0635	Yes
SCSI Internal 2x CD-ROM Drive	OCDIS6M	No
SCSI Internal 4x CD-ROM Drive	OCS4XIM	No
IBM 270MB SCSI-2 Hard File	OSC270Y	No
IBM 340MB SCSI-2 Hard File	OSC340Y	No
IBM 540MB SCSI-2 Hard File	OSC540Y	No
IBM 1GB SCSI-2 Hard File	32G4198	No
3.5 Inch Fixed Disk Installation Kit [1]	8123899	Yes

ISA, IDE and EIDE devices not listed above should work with PC 340 6560 systems provided that the devices have been designed to fully meet the appropriate bus interface specifications.

Given that any compatibility statement cannot be exhaustive, we strongly recommend that any proposed configuration is thoroughly tested prior to commitment.

18.3.1 Diskette Drives

The maximum number of diskette drives supported is two.

If ordering a second 1.44MB diskette drive then an *Install Kit* (P/N 70G8165) is required.

This enables the installation of the diskette drive into a 5.25 inch bay.

Note: PC 340 6560 systems do not support the 2.88MB diskette drive.

18.3.2 IDE/EIDE Devices

A maximum of three IDE/EIDE devices are supported for internal installation, provided that any installed hard disk drive complies with the EIDE Specification hard disk drive capacity limit of 8.3GB.

If installing a second hard disk drive then the *3.5 Inch Fixed Disk Installation Kit* (P/N 8123899) [(1)] is required.

This enables the installation of a 3.5 inch hard disk drive into a 5.25 inch bay.

If installing a third IDE/EIDE drive (beit a hard disk drive or a CD-ROM drive) then an additional IDE cable (P/N 06H3610) is required.

As only one device can be active on an IDE cable at any one time, multitasking operating systems will perform better if the second-most-used IDE device is connected to the secondary IDE cable (if installed).

All CD-ROM drives install directly into the 5.25 inch bays without requiring an installation kit.

18.4 Adapter Cards & Dongles

This section summarises the adapter card & dongle support position for PC 340 6560 systems.

PC 340 6560 Adapter Card & Dongle Support		
Adapter Card	**Option Number**	**Support Position**
IBM PCMCIA (2 front slots) ISA Adapter	O2ATPCM	Yes
IBM Auto LANStreamer PCI Adapter	OTRPASY	Yes
IBM Auto 16/4 Token Ring ISA Adapter	OTRACSY	Yes
IBM Token Ring 16/4 Adapter II	OTRDASE	Yes
IBM Auto Wake Token Ring ISA Adapter	55H6783	No
IBM PCI Ethernet Adapter	OENSBSY	Yes
IBM LAN Adapter for Ethernet	OENAASE	Yes
IBM LAN Adapter for Ethernet TP	OETAASE	Yes
IBM LAN Adapter for Ethernet CX	OE2AASE	Yes
IBM EtherJet ISA Adapter	OENABSY	Yes
IBM EtherJet 10BaseT	OETABSY	Yes
IBM 100/10 ISA Ethernet Adapter	OETEASY	Yes
IBM 100/10 PCI Ethernet Adapter	OETSASY	Yes
IBM EtherJet ISA Adapter with Wake On LAN	72H4042	No
RIPL Option for EtherJet ISA Adapter (72H4042)	25H6060	No
Infra Red Transceiver Dongle (c/w drivers for OS/2, Windows 3.x & Windows 95)	75H7987	No

PCI and ISA adapters not listed above should work with PC 340 6560 systems provided that the devices have been designed to fully meet the appropriate bus interface specifications.

ISA adapters that run at 8MHz are supported, as are PCI adapters that are designed to revision 2.0 of the PCI specification.

Given that any compatibility statement cannot be exhaustive, we strongly recommend that any proposed configuration is thoroughly tested prior to commitment.

19 Preloaded Software

PC 340 6560 standard models are available with the following preloaded software options:

- PC DOS 7.0/Windows 3.1
- Windows 95

All standard models are supplied with a Ready To Configure (RTC) CD.

The RTC CD contains:

- Device drivers for OS/2, Windows 3.x, Windows 95 and Windows NT.
- Easy Tools-type applications.
- A GUI Setup application.

  This is designed to assist you with the installation and configuration of device drivers and applications.

20 Operating System Support

The following operating systems are supported for use on PC 340 6560 models:

- IBM PC DOS 6.3
- IBM PC DOS 7.0
- IBM OS/2 2.11
- IBM OS/2 Warp 3.0
- IBM LAN Server 3.0
- IBM LAN Server 4.0
- Microsoft MS DOS 6.0
- Microsoft MS DOS 6.2
- MS Windows 3.1
- MS Windows 3.11
- MS Windows For Work Groups 3.11
- MS Windows 95
- MS Windows NT 3.51
- Novell Netware 3.12 (Client & Server)
- Novell Netware 4.10 (Client & Server)
- SCO OpenServer 5.0

21 Security

The PC 340 6560 models offer various features aimed at maximising data security.

System access is controlled through the Power On Password (POP) and the Administrator Password (also known as the Privileged Access Password (PAP)).

The Power On Password and Administrator Password are described in the following sections.

21.1 Power On Password

Setting a Password On Password ensures that only an authorised user can operate the system, by entering the correct Power On Password for the particular system that they wish to use.

The Power On Password can be set to operate in one of two ways:

1 Password Prompt = ON

This is the default configuration. In this case, the user will be prompted to enter the Power On Password during the boot process. The system will remain unusable until the correct Power On Password is entered.

2 Password Prompt = OFF

This mode, often referred to as Unattended Startup Mode, enables the system to start (or restart), complete the Power On Self Test and then load the operating system without requiring the Power On Password to be entered.

Security is maintained by the mouse and keyboard remaining locked until the Power On Password is entered.

The Unattended Startup Mode is of special benefit to Customers who have systems that must remain operational 24 hours per day (such as servers) or systems that handle data sufficiently sensitive to warrant it being located within a secured environment such as a locked room, thereby making attended start-up impractical or at least very inconvenient.

21.2 Administrator Password

The Administrator Password is of most benefit when a Power On Password is also defined.

This configuration enables the LAN Administrator to separately define particular users who are authorised to use the systems (by assigning them Power On Passwords) and to also define those users (if any besides the LAN Administrator) that are authorised to work with the Setup utility (by assigning them Administrator Passwords).

Note: You can set an Administrator Password without setting a Power On Password. Please be aware that whilst this restricts access to the Setup utility, it does mean that there is no restriction governing who can use the system.

21.3 Network Boot

PC 340 6560 models may be set up to boot from the network rather than any locally installed media such a diskette drive or a hard disk drive.

When a network card is installed into a PC 340 6560 system, it will appear as a selectable option within the *Startup Sequence* in *Setup*.

Selecting the network card as the first startup device will cause the system to boot from the network. The diskette drive and any installed hard disks can be removed from the Startup Device listing.

The LAN Administrator can guard against users resetting the boot device from Network to a local media device by setting an Administrator Password.

22 Power Management

PC 340 6560 systems implement a simplified power management system that provides a single reduced power consumption mode, referred to as *Standby*.

This reduced power consumption mode meets the requirements of the EPA Energy Star Specification.

PC 340 6560 systems conform to Version 1.1 of the Advanced Power Management BIOS Interface Specification.

The system will enter Standby mode after a user-selected period of inactivity.

In Standby, the processor slows down to 8MHz, the display is signalled to enter VESA power saving mode, and the hard disk drive may be powered down (optional).

Normal operation resumes when the mouse is moved, a key depressed, or a scheduled event occurs.

While in Standby mode, normal power is provided to adapters - this means that any LAN or Host connections are maintained.

23 Configuration

This chapter offers guidance that will help you to configure PC 340 6560 systems.

The areas covered are:

- Using ISA Adapters with PCI Adapters

23.1 ISA Adapters With PCI Adapters

This section describes how to configure PC 340 6560 systems to use ISA adapter cards in conjunction with PCI adapter cards.

Perform the following steps prior to installing an ISA (non-Plug-N-Play) adapter card into a PC 340 system containing a PCI adapter card.

1. Check the manual that accompanies your ISA adapter card to determine what system resources it requires. The resource requirements that need to be noted include shared memory and I/O address ranges plus DMA and IRQ assignments.

2. Power on the system.

3. Press the F1 key when the memory count first appears. This will take you into the *Setup* utility.

4. Select *ISA Legacy Resources* from the *Setup* main menu.

5. Work through the *ISA Legacy Resources* menu step by step, selecting each system resource required by your ISA adapter card so that it is set to *Not available*. Setting ISA resources to *Not available* means that they have been made not available to PCI and are therefore preserved/protected for exclusive use by your ISA adapter card(s).

   Warning: Shared memory required by ISA adapter cards **MUST** be set to *Not Available* using multiples of 16KB even if the physical memory requirement is less than this. For example, to configure correctly for an IBM ISA 16 token ring card having the default 8KB ROM at CC000, set the memory range CC000-CFFFF to *Not available*.

6. Check that either IRQ9 or IRQ10 or IRQ11 has been left set as *Available* within *ISA Legacy Resources* so that your PCI adapter(s) are able to configure.

7. When done, return to the *Setup* main menu.

8. Select *Advanced Setup*.

9. Select *ROM Shadowing*.

10 If your ISA adapter card contains ROM or uses a RAM buffer, you must disable ROM shadowing for the address range used by the ISA adapter card.

   To do this, disable ROM shadowing for the 32KB menu field entry/entries that contain the memory range required for use by your ISA adapter card.

11 When done, press *ESC* repeatedly until an option to save the changes appears.

12 Save the changes and exit the *Setup* utility.

13 Your ISA adapter may now be installed and tested using the adapter diagnostics to ensure that the adapter will initialise and function properly.

24 Specification Summary

This section provides a quick reference for the PC 340 6560 model range.

PC 340 6560 Quick Reference		
Processor		P100-P133
Cache		0/256KB
Memory (Max)		128MB
Core Chipset		SIS 531x
Peripheral Controller		EIDE (mode 5)
SMART		No
PCI BIOS		2.1
Plug'nPlay BIOS		1.0A
DMI-Compliance		Yes
Wake On LAN		No
Infra Red		No
USB		No
Bays		4
Slots	Total	4
	PCI	1
	PCI/ISA	1
	ISA	2
Dimensions (mm)	height	440
	width	420
	depth	102
Weight (kg)		8
Noise Output (bels)		4.8
Heat Output Max (BTU)		493
Power Supply (W)		145
Power Consumption		-
EPA Energy Star Power Management		Yes

25 Feedback Form

If you would like to pass comments relating to this document back to its author then please photocopy this page, record your mailing address and comments in the spaces below, and mail to:

Bob Beck,

(Ref PC 340 6560 Technical Guide)

IBM Personal Computer Company,

Normandy House (4S),

Bunnian Place,

Basingstoke,

RG21 7NZ.

Your mailing address:

Your comments: