11. Kişisel Bilgisayar Sistemleri

Kişisel Bilgisayarların Genel Sınıflandırması

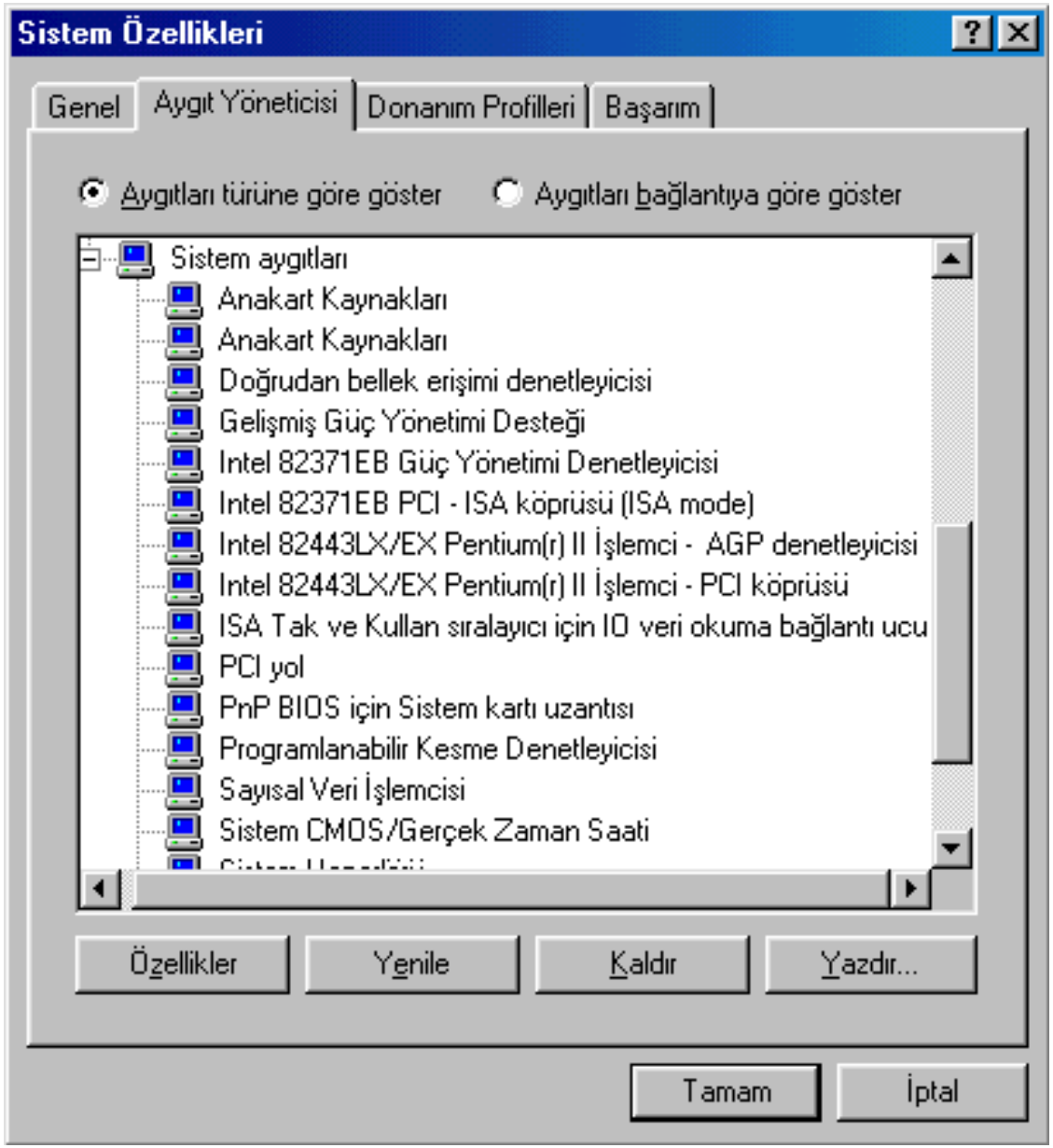
Fiziksel Özelliklerine Göre Sınıflama
Yerleşik Kart, Masaüstü, Taşınabilir…
Kişisel Bilgisayarlar, Çalışma İstasyonları

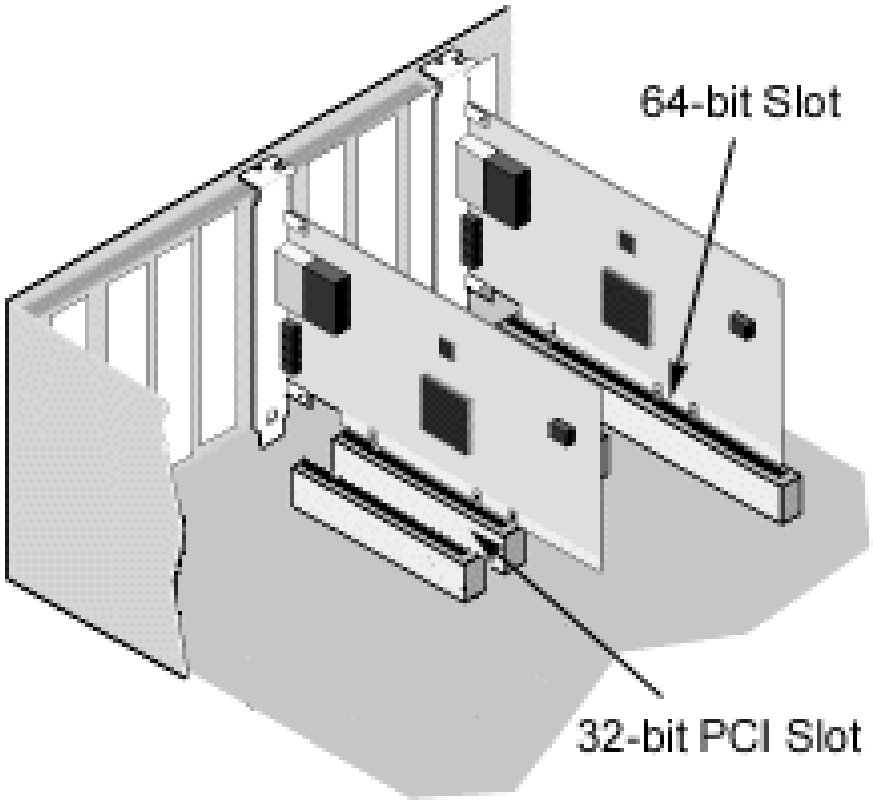
Uygulama Alanına Göre Sınıflama
Ev, Ofis ve İş Uygulamaları

Uygulama Amacına Göre Sınıflama
Eğitim, Endüstriyel, Ticari, Tıbbi Amaçlı Uygulamalar

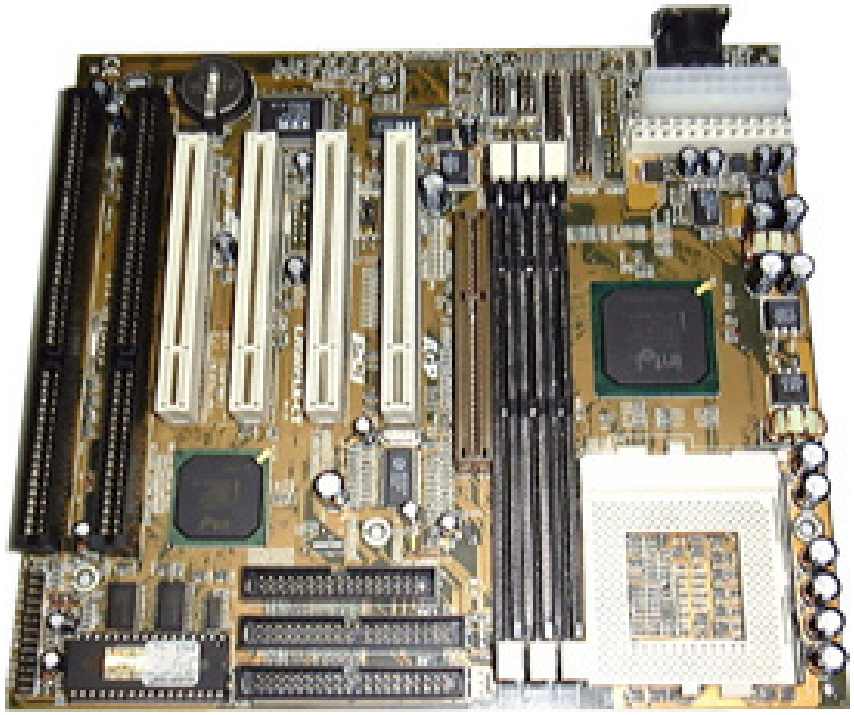
Kullanım Amacına Göre Sınıflama
Sunucu, Hizmet, Oyun, Köprü, İletişim Amaçlı Uygulamalar

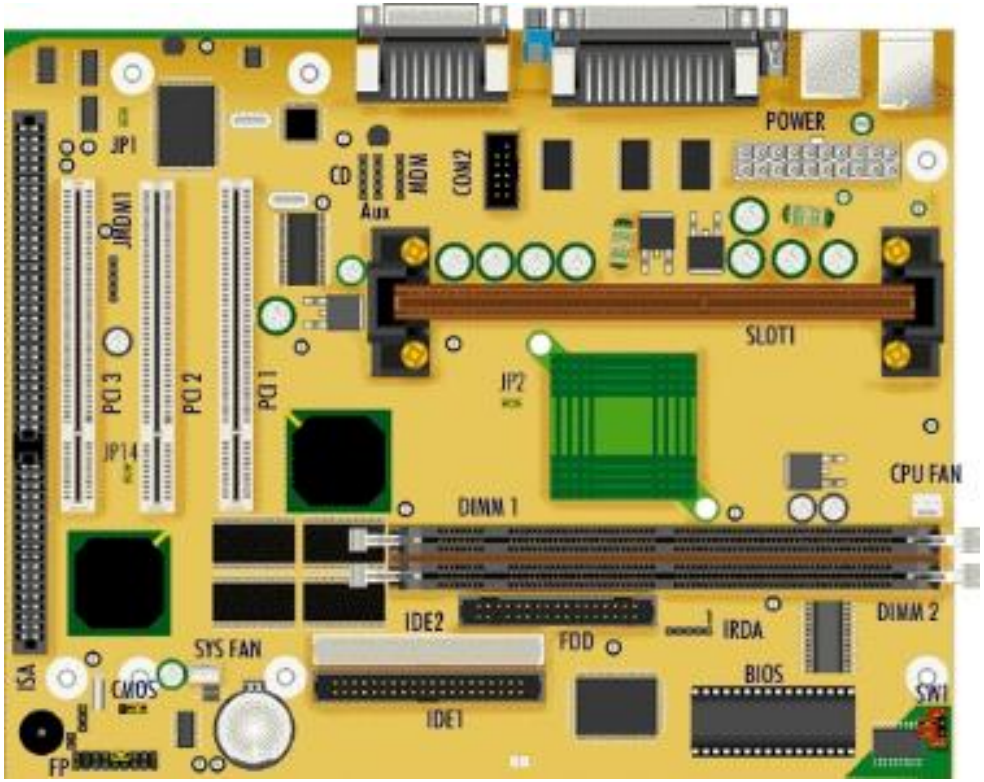
IBM Uyumlu Kişisel Bilgisayar Donanımı



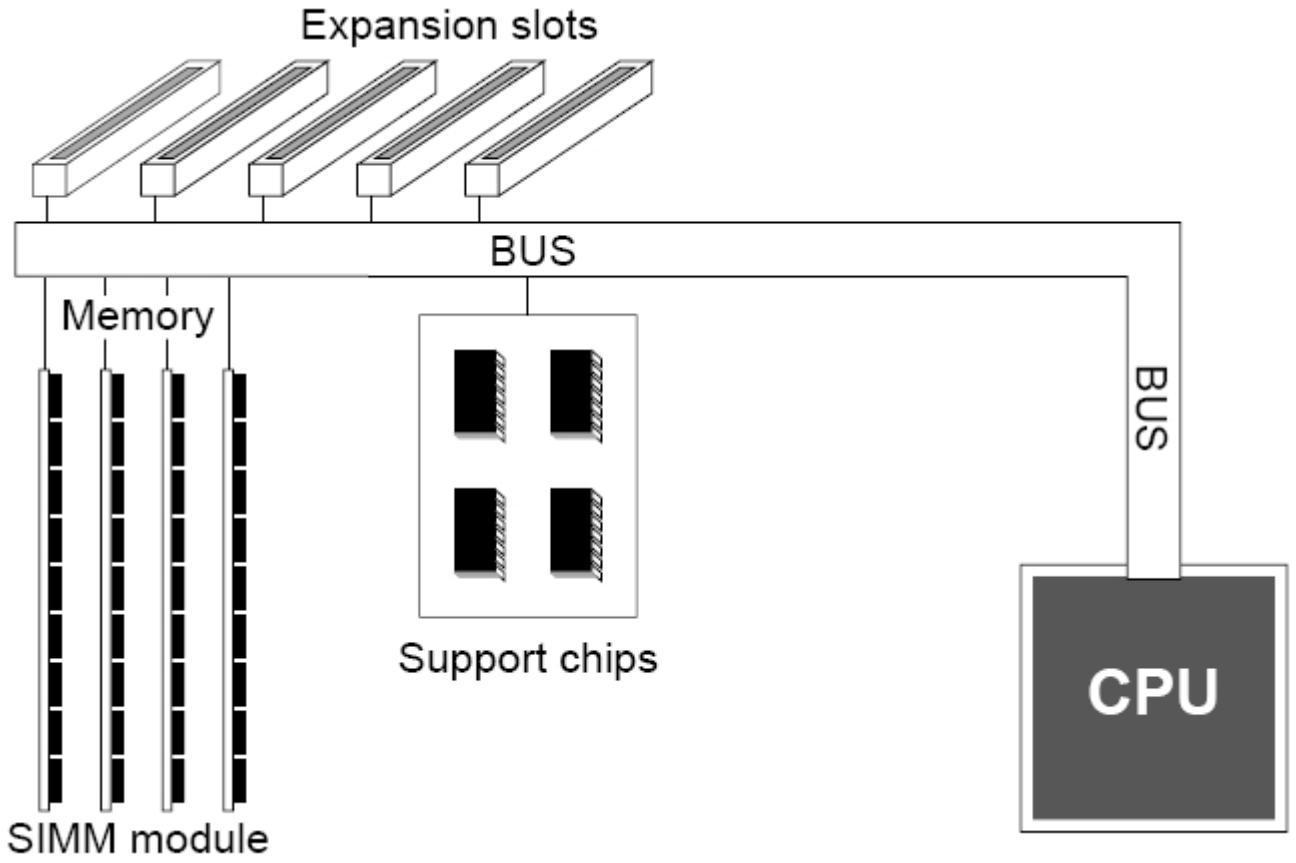


PC Sistem Anakart





PC Sistem Blok Diyagram



PC Sistem Bellek Haritası

Block	Address	Contents
15	F000:0000 - F000:FFFF	ROM-BIOS
14	E000:0000 - E000:FFFF	Free for ROM cartridges
13	D000:0000 - D000:FFFF	Free for ROM cartridges
12	C000:0000 - C000:FFFF	additional ROM-BIOS
11	B000:0000 - B000:FFFF	Video RAM
10	A000:0000 - A000:FFFF	Additional video RAM (VGA/EGA)
9	9000:0000 - 9000:FFFF	RAM from 576K to 640K
8	8000:0000 - 8000:FFFF	RAM from 512K to 576K
7	7000:0000 - 7000:FFFF	RAM from 448K to 512K
6	6000:0000 - 6000:FFFF	RAM from 384K to 448K
4	5000:0000 - 5000:FFFF	RAM from 320K to 384K
5	4000:0000 - 4000:FFFF	RAM from 256K to 320K
3	3000:0000 - 3000:FFFF	RAM from 192K to 256K
2	2000:0000 - 2000:FFFF	RAM from 128K to 192K
1	1000:0000 - 1000:FFFF	RAM from 64K to 128K
0	0000:0000 - 0000:FFFF	RAM from 0K to 64K

PC Sistem Giriş/Çıkış Haritası

Component	PC/XT	AT
DMA controller (8237A-5)	000-00F	000-01F
Interrupt controller (8259A)	020-021	020-03F
Timer	040-043	040-05F
Programmable Peripheral Interface (PPI 8255A-5)	060-063	none
Keyboard (8042)	none	060-06F
Realtime clock (MC146818)	none	070-07F
DMA page register	080-083	080-09F
Interrupt controller 2 (8259A)	none	0A0-0BF
DMA controller 2 (8237A-5)	none	0C0-0DF
Math coprocessor	none	0F0-0F1
Math coprocessor	none	0F8-0FF
Hard drive controller	320-32F	1F0-1F8
Game port (joysticks)	200-20F	200-207
Expansion unit	210-217	none
Interface for second parallel printer	none	278-27F
Second serial interface	2F8-2FF	2F8-2FF
Prototype card	300-31F	300-31F
Network card	none	360-36F
Interface for first parallel printer	378-37F	378-37F
Monochrome Display Adapter and parallel interface	3B0-3BE	3B0-3BF
Color/Graphics Adapter	3D0-3DF	3D0-3DF
Disk controller	3F0-3F7	3F0-3F7
First serial interface	3F8-3FF	3F8-3FF

PC Sistem Kesme Haritası

No.*	Address*	Purpose
00	000 - 003	Processor: Division by zero
01	004 - 007	Processor: Single step
02	008 - 00B	Processor: NMI (Error in RAM chip)
03	00C - 00F	Processor: Breakpoint reached
04	010 - 013	Processor: Numeric overflow
05	014 - 017	Hardcopy
06	018 - 01B	Unknown instruction (80286 only)
07	01D - 01F	Reserved
08	020 - 023	IRQ0: Timer (Call 18.2 times/sec.)
09	024 - 027	IRQ1: Keyboard
0A	028 - 02B	IRQ2: 2nd 8259 (AT only)
0B	02C - 02F	IRQ3: Serial port 2
0C	030 - 033	IRQ4: Serial port 1
0D	034 - 037	IRQ5: Hard drive
0E	038 - 03B	IRQ6: Diskette
0F	03C - 03F	IRQ7: Printer
10	040 - 043	BIOS: Video functions
11	044 - 047	BIOS: Determine configuration
12	048 - 04B	BIOS: Determine RAM memory size
13	04C - 04F	BIOS: Diskette/hard drive functions
14	050 - 053	BIOS: Access to serial port
15	054 - 057	BIOS: Cassettes/extended function
16	058 - 05B	BIOS: Keyboard inquiry

PC Sistem Kesme Haritası

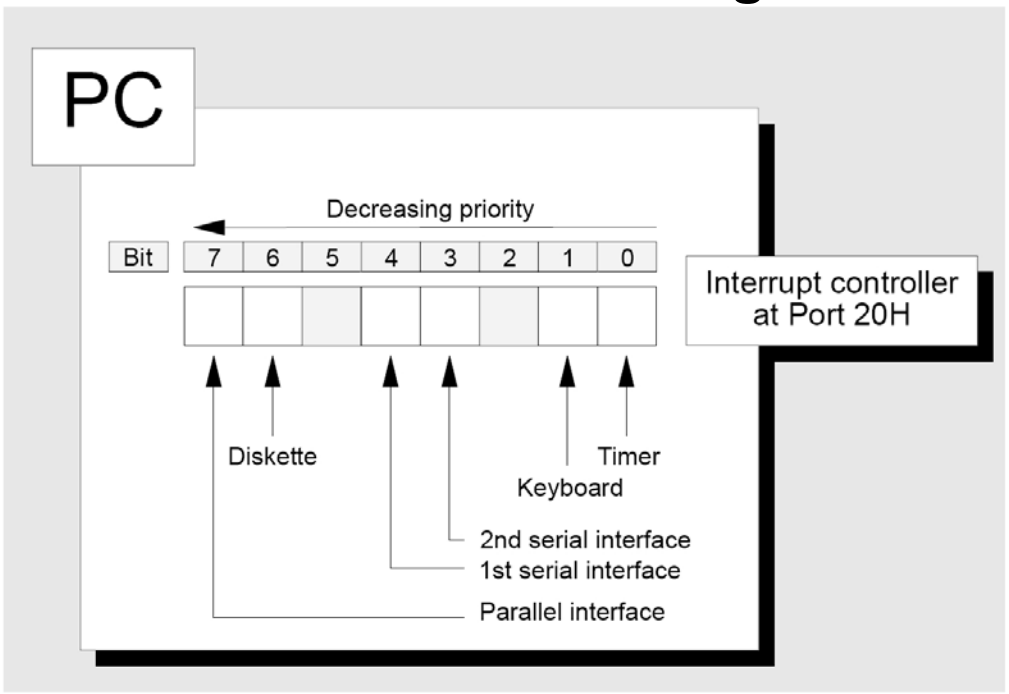
No.*	Address*	Purpose
17	05C - 05F	BIOS: Access to parallel printer
18	060 - 063	Call ROM BASIC
19	064 - 067	BIOS: Boot system (Ctrl+Alt+Del)
1A	068 - 06B	BIOS: Prompt time/date
1B	06C - 06F	Break key (not Ctrl-C) pressed
1C	070 - 073	Called after each INT 08
1D	074 - 077	Address of video parameter table
1E	078 - 07B	Address of diskette parameter table
1F	07C - 07F	Address of character bit pattern
20	080 - 083	DOS: Quit program
21	084 - 087	DOS: Call DOS function
22	088 - 08B	Address of DOS quit program routine
23	08C - 08F	Address of DOS Ctrl-Break routine
24	090 - 093	Address of DOS error routine
25	094 - 097	DOS: Read diskette/hard drive
26	098 - 09B	DOS: Write diskette/hard drive
27	09C - 09F	DOS: Quit program, stay resident
28	0A0 - 0A3	DOS: DOS is unoccupied
29-2E	0A4 - 0BB	DOS: Reserved
2F	0BC - 0BF	DOS: Multiplexer
30-32	0C0 - 0CB	DOS: Reserved
33	0CC - 0CF	Mouse driver functions
34-40	0D0 - 0FF	DOS: Reserved
41	104 - 107	Address of hard drive table 1
42-45	108 - 117	Reserved
46	118 - 11B	Address of hard drive table 2
47-49	11C - 127	Can be used by programs
4A	128 - 12B	Alarm time reached (AT only)
4B-5B	12C - 16F	Free: can be used by programs

PC Sistem Kesme Haritası

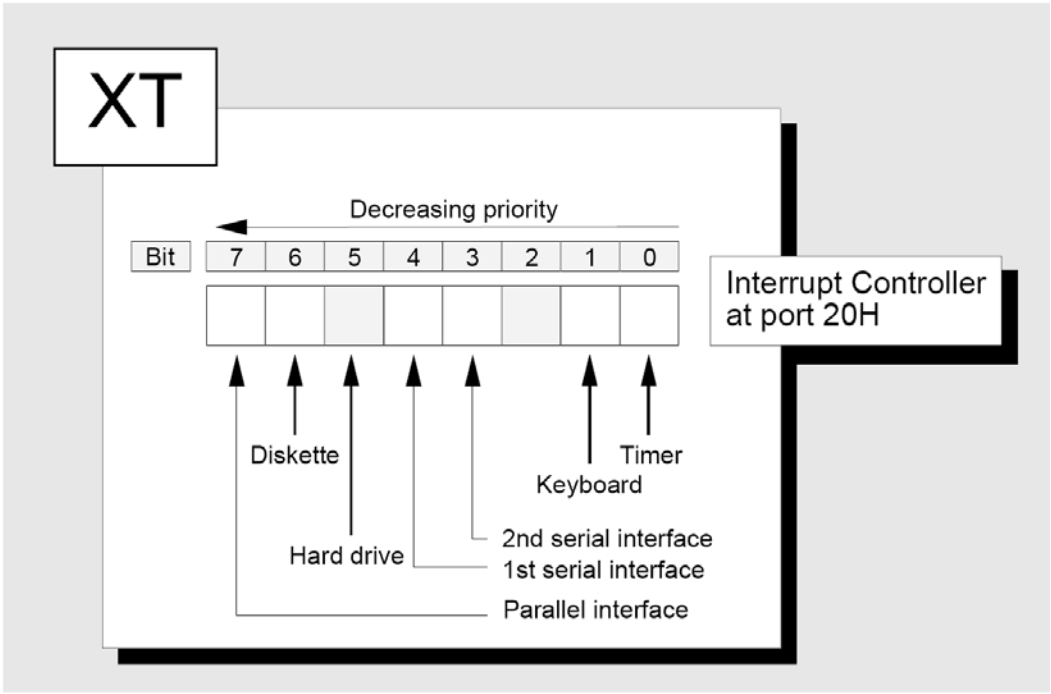
No.*	Address*	Purpose
5C	170 - 173	NETBIOS functions
5D-66	174 - 19B	Free: can be used by programs
67	19C - 19F	EMS memory manager functions
68-6F	1A0 - 1BF	Free: can be used by programs
70	1C0 - 1C3	IRQ08: Realtime clock (AT only)
71	1C4 - 1C7	IRQ09: (AT only)
72	1C8 - 1CB	IRQ10: (AT only)
73	1CC - 1CF	IRQ11: (AT only)
74	1D0 - 1D3	IRQ12: (AT only)
75	1D4 - 1D7	IRQ13: 80287 NMI (AT only)
76	1D8 - 1DB	IRQ14: Hard drive (AT only)
77	1DC - 1DF	IRQ15: (AT only)
78-7F	1E0 - 1FF	Reserved
80-F0	200 - 3C3	Used within the BASIC interpreter
F1-FF	3C4 - 3CF	Reserved

PC Sistem Kesme Önceliği

PC interrupt requests and priorities

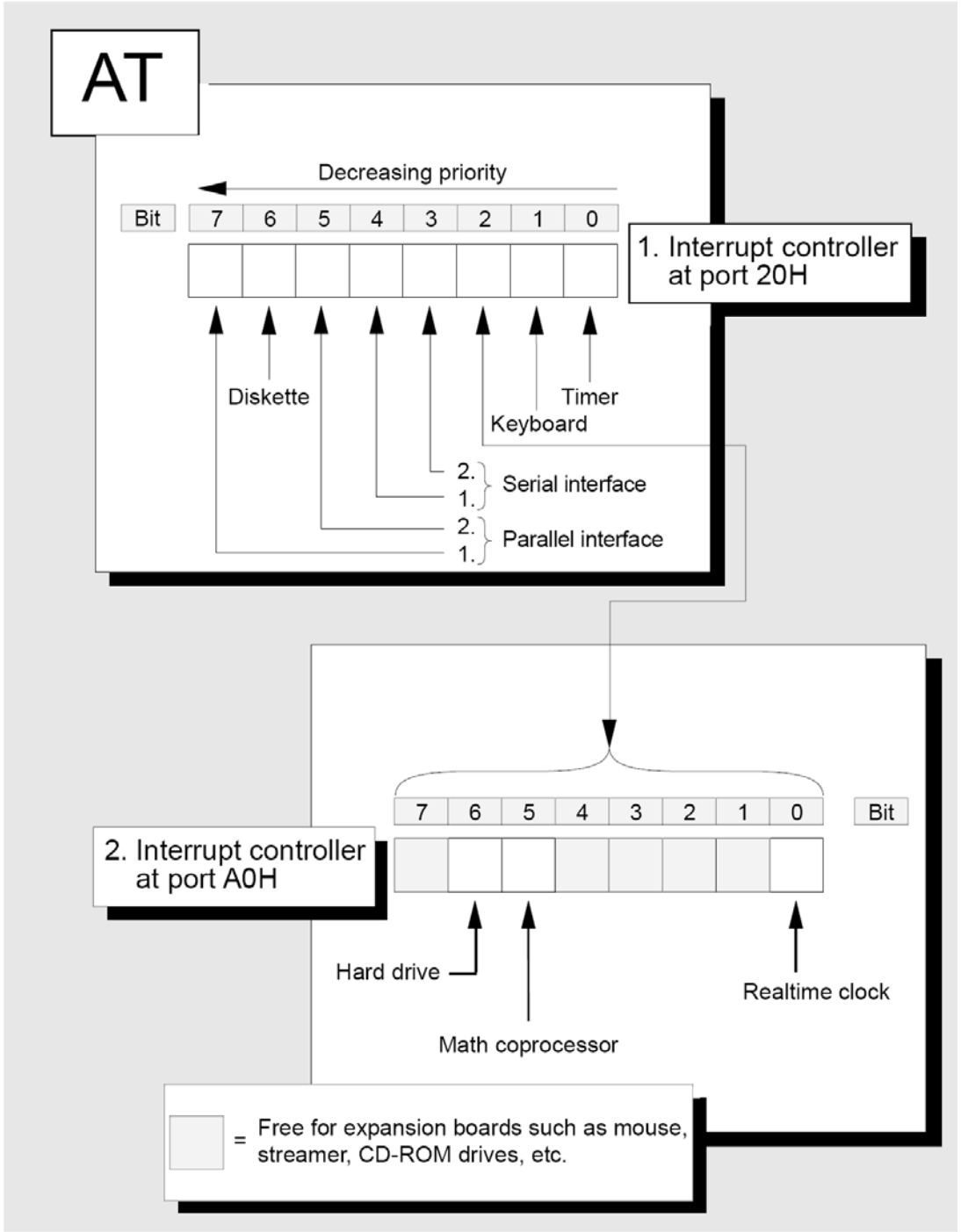


XT interrupt requests and priorities

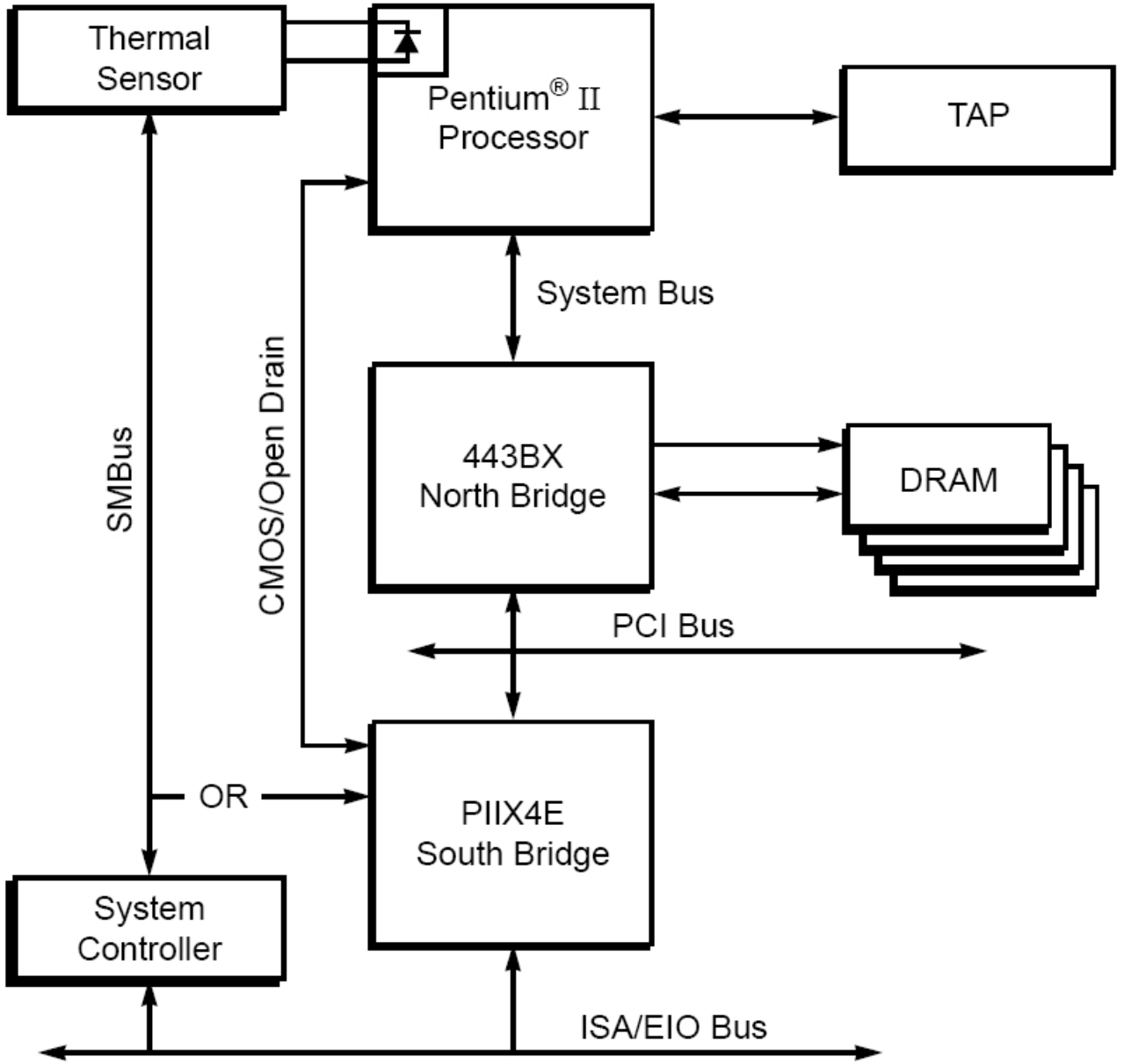


PC Sistem Kesme Önceliği

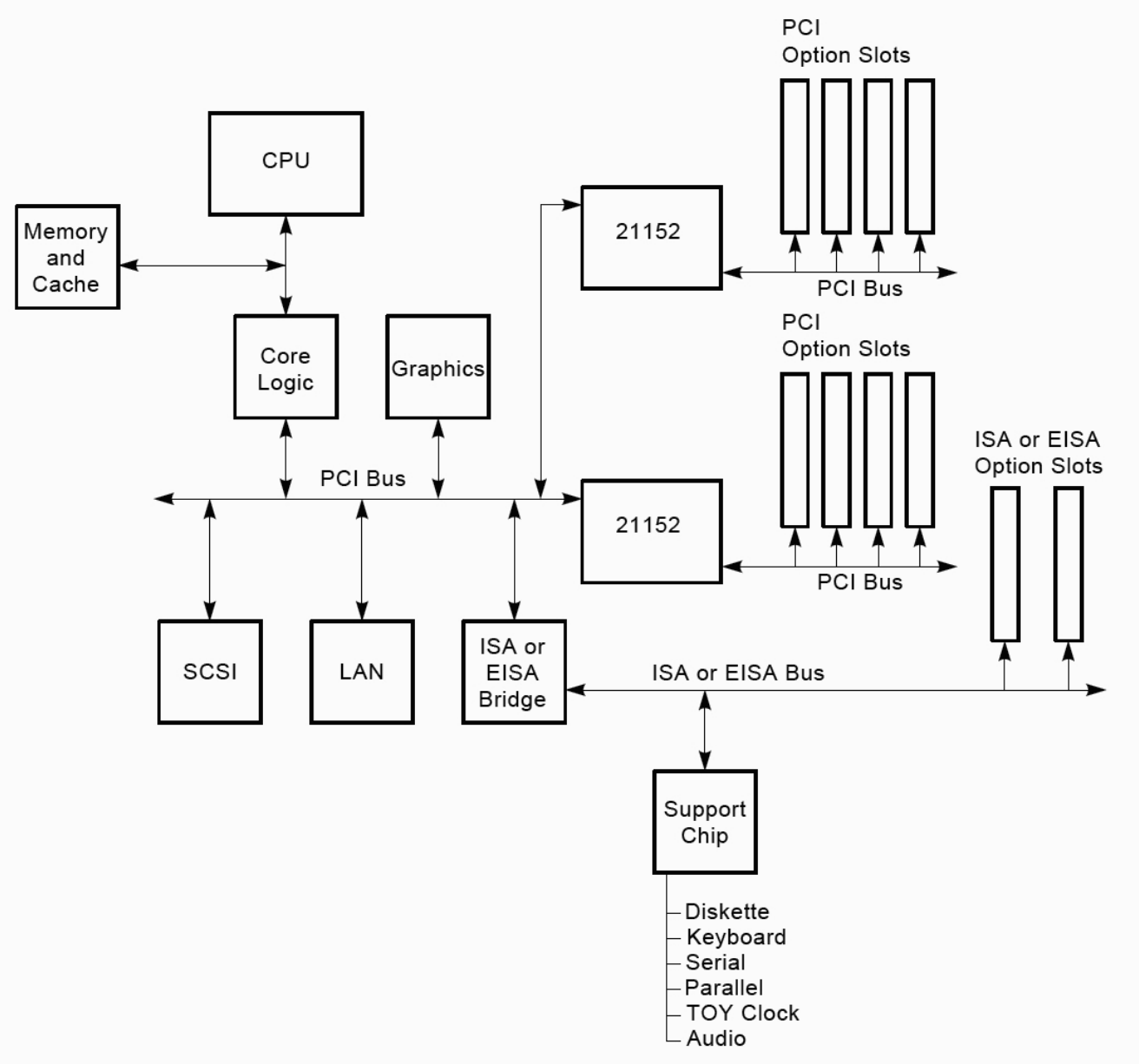
AT interrupts and priorities



Pentium II Sistem Blok Diyagram



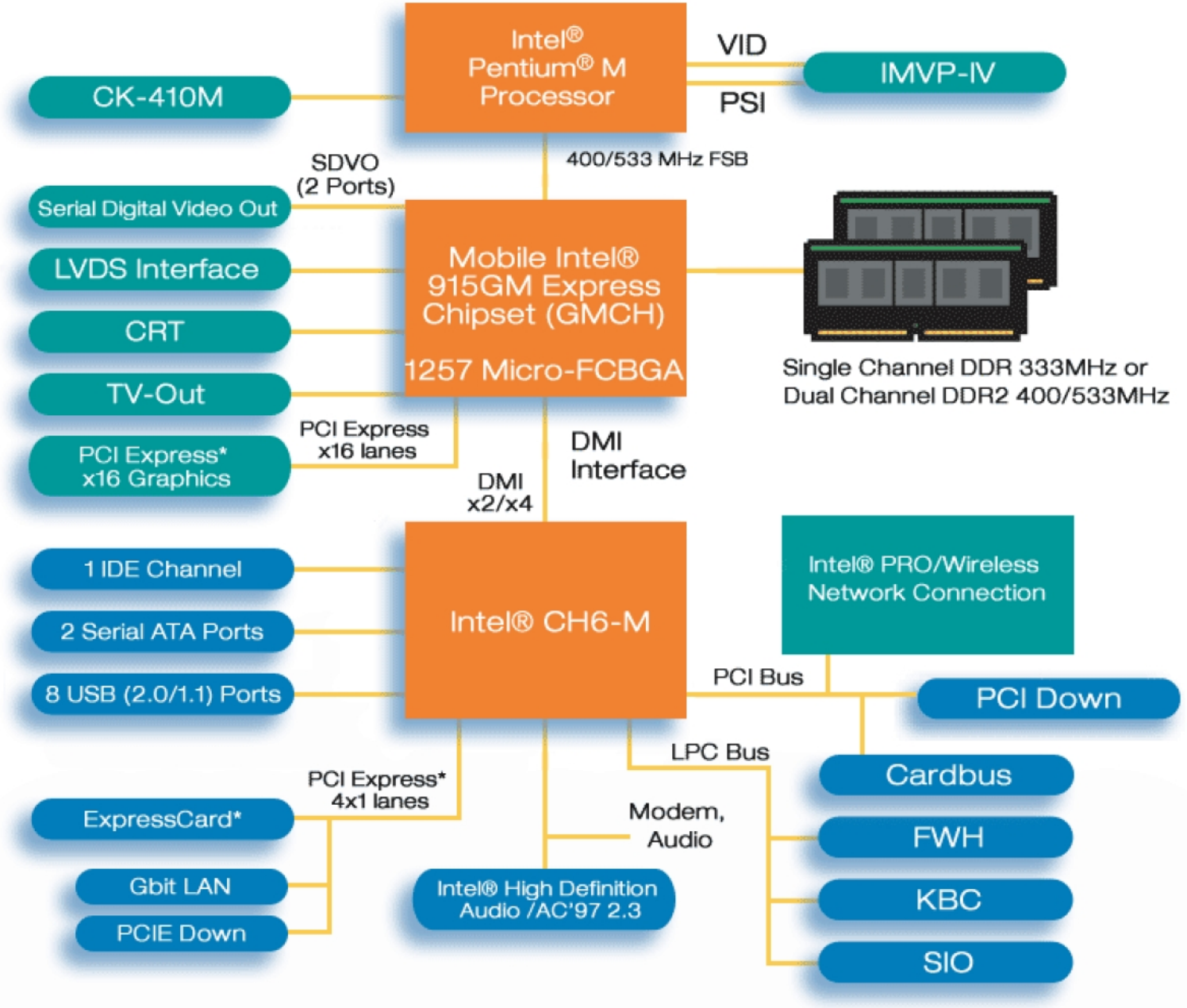
PCI-PCI Köprü Sistem Blok Diyagram



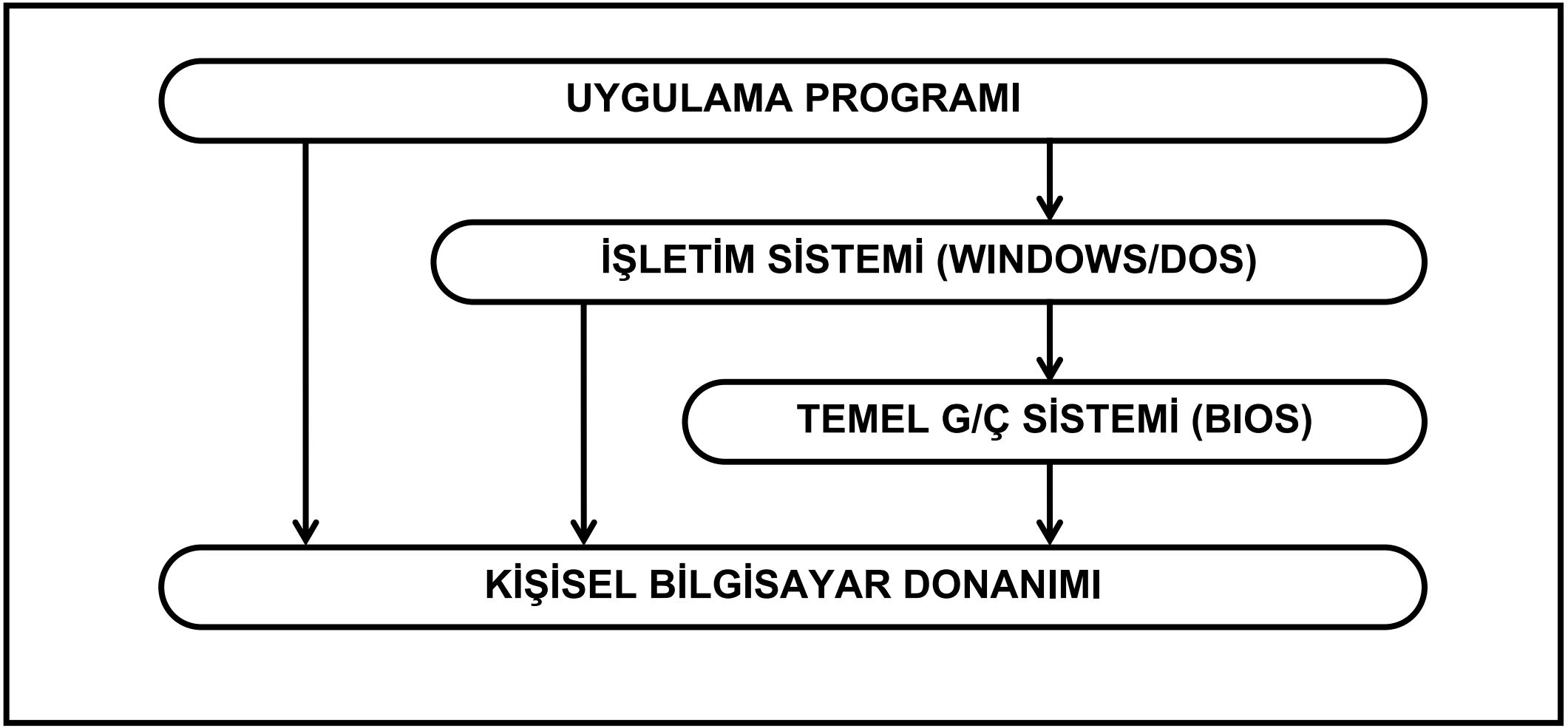
PCI-PCI Köprü Teknik Özellikleri

Part Description	Intel® 21152BB	Intel® 21154AE	Intel® 21154BE	Intel® 21555AB	Intel® 21555BB	Intel® 31154	Intel® 41210
PCI Width	32-bit	64-bit	64-bit	64-bit	64-bit	64-bit	64-bit
Max Clock	33 MHz	33 MHz	66 MHz	33 MHz	66 MHz	133 MHz	133 MHz
CLK, Req#, GNT# Pins	4 Sets	9 Sets	4 Sets	9 Sets	9 Sets	9 Sets	6 Sets/PCI-X bus
Package	160 PQFP	304 PBGA	304 PBGA	304 PBGA	304 PBGA	421 PBGA	521 FC3BGA
PCI Revision	2.3	2.3	2.3	2.3	2.3	PCI-X 1.0	PCI Express* 1.0a/PCI-X v 1.0b
JTAG	No	Yes	Yes	Yes	Yes	Yes	Yes
GPIO	No	Yes	Yes	No	No	Yes	No
Primary Write Buffer	88 Bytes	88 Bytes	88 Bytes	256 Bytes	256 Bytes	8K Bytes	1K Bytes
Primary Read Buffer	72 Bytes	72 Bytes	72 Bytes	256 Bytes	256 Bytes	8K Bytes	1K Bytes
Secondary Write Buffer	88 Bytes	152 Bytes	152 Bytes	256 Bytes	256 Bytes	8K Bytes	1K Bytes
Secondary Read Buffer	72 Bytes	152 Bytes	152 Bytes	256 Bytes	256 Bytes	8K Bytes	1K Bytes

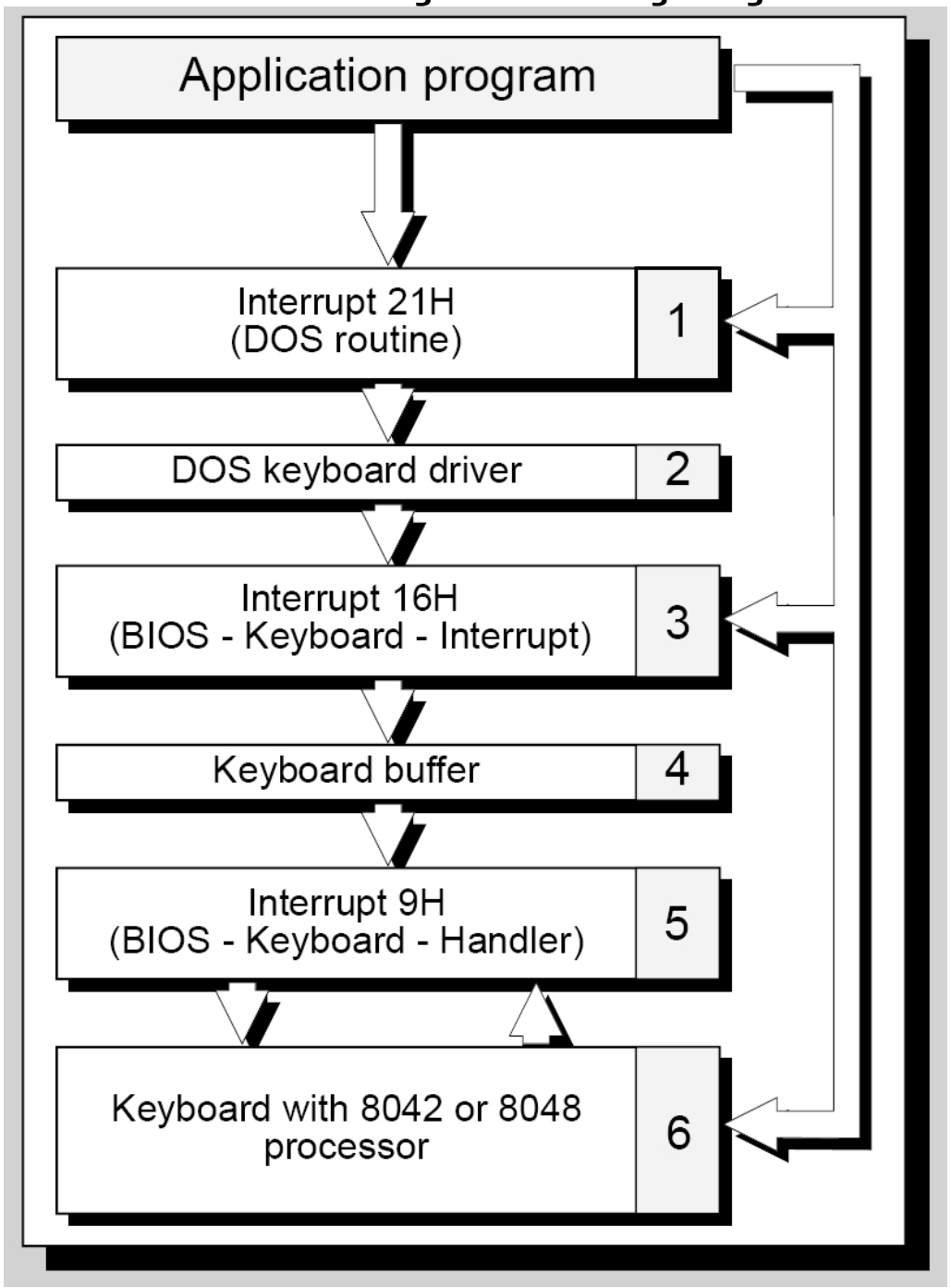
Pentium II Sistem Blok Diyagram



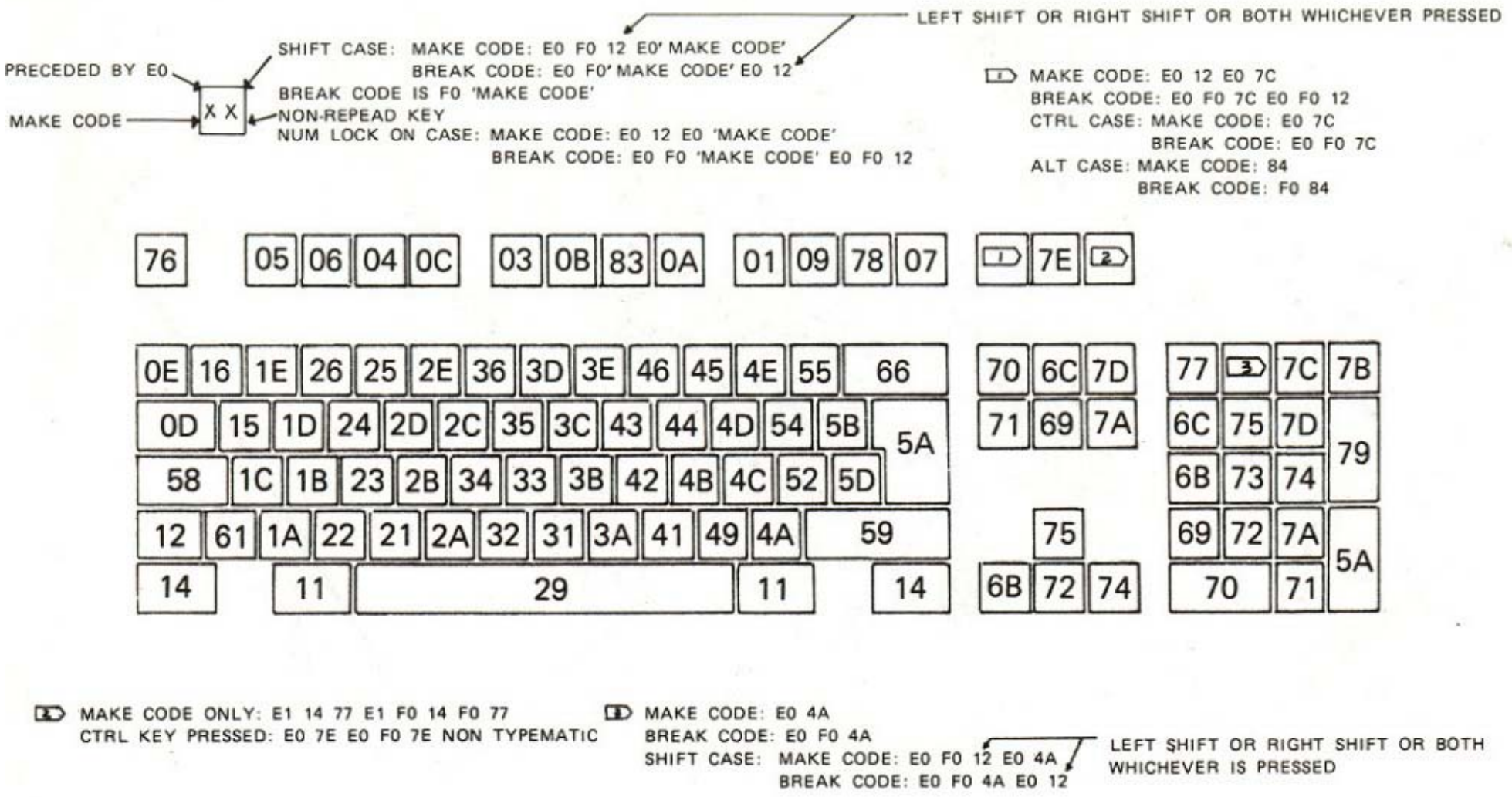
IBM Uyumlu Kişisel Bilgisayar Yazılımı



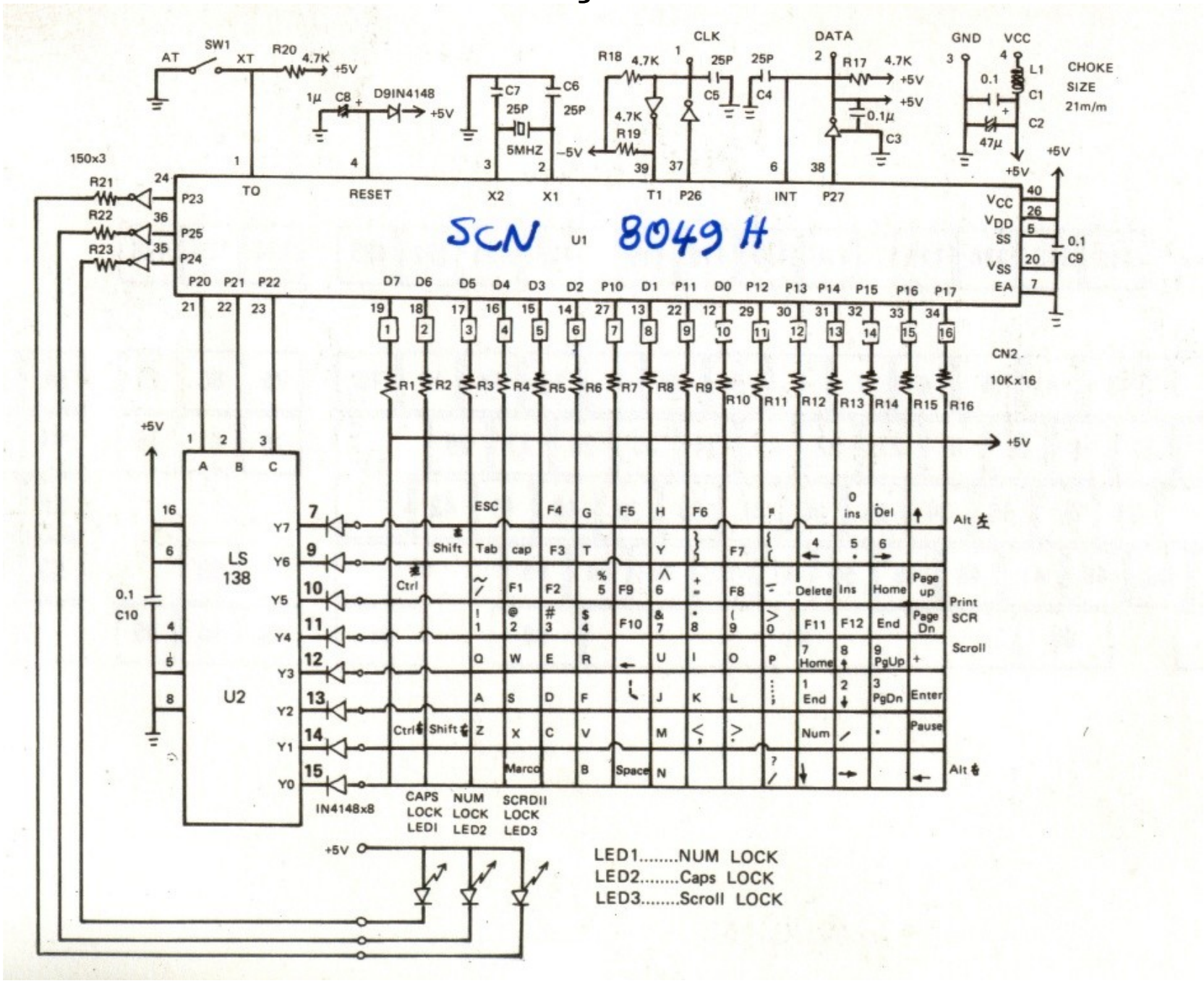
PC Sistem Tuş Takımı Çalışması



PC Sistem Tuş Takımı Tarama Kodları



PC Sistem Tuş Takımı Devresi



TEMEL G/Ç SİSTEMİ (BIOS, Basic Input/Output System)

Function check of CPU (coprocessor, real mode,
BIOS ROM checksum
CMOS RAM (battery operated RAM) checksum
Test/initialize DMA controller
Test/initialize keyboard controller
Check first 64K of RAM
Test/initialize interrupt controller
Test/initialize cache controller (AT only)

TEMEL G/Ç SİSTEMİ FONKSİYONLARI

10H	Video card access
11H	Configuration test
12H	RAM test
13H	BIOS disk functions
14H	Serial interface functions
15H	Cassette and extended AT functions
16H	Keyboard functions
17H	Parallel interface functions
1AH	Date/time/realtime clock functions

INT 10H Video

Input

AH = 00H

AL = Video mode

0: 40x25 text mode, monochrome (color card)

1: 40x25 text mode, color (color card)

2: 80x25 text mode, monochrome (mono card)

3: 80x25 text mode, color (color card)

4: 320x200 4-color graphics (color card)

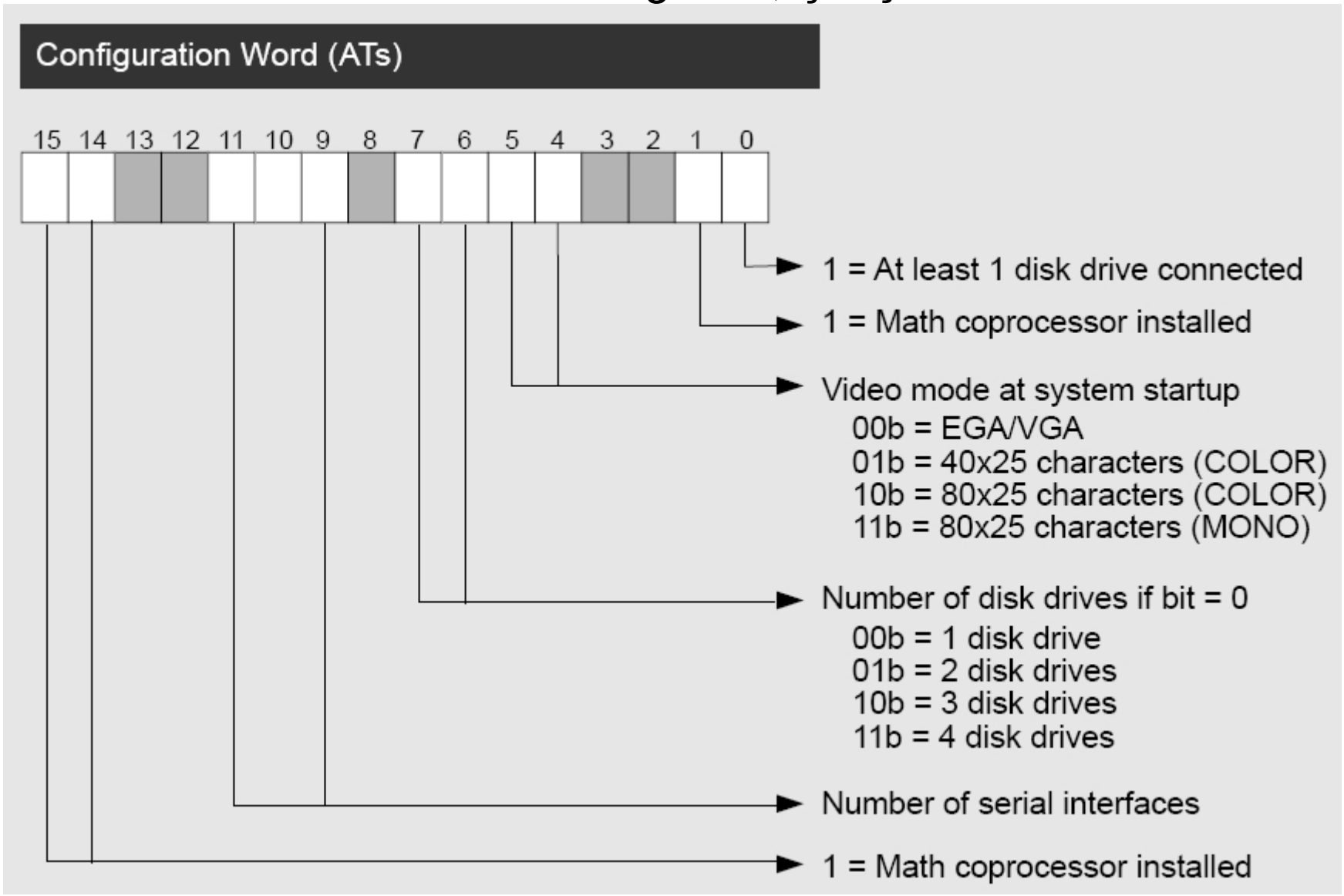
5: 320x200 4-color graphics (color card)

(colors displayed in monochrome)

6: 640x200 2-color graphics (color card)

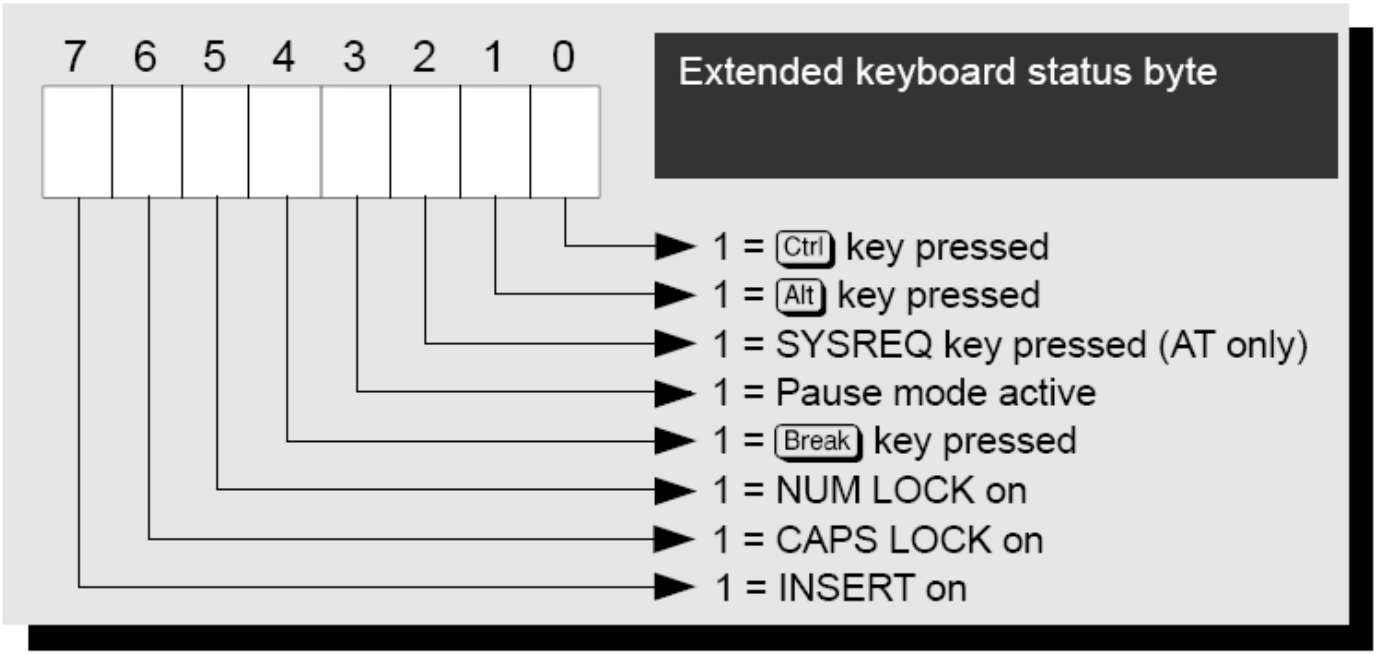
7: Internal mode (mono card)

INT 11H Config Test, Çıkış=AX



INT 16H, Keyboard

AH=18H
Extended keyboard status



AH=11H
Read extended keyboard
for character

Input AH = 11H

Output Zero flag=1: No character in the keyboard buffer

Zero flag=0: Character available

AL = 0: Extended key code

AH=Extended key code

AL > 0: Normal key activated

AL=ASCII code of key

AH=Scan code of key

Keyboard buffer with start, end pointers and ring buffer