
Index

A

- accessing Configuration/Setup Utility program 4-7
- activity monitor option 4-22
- adapters, installing 3-6
- adapters, replacing 7-36
- add
 - drivers 2-2, 2-4
 - internal drive 3-9
 - memory modules 3-2
 - SBC 3-2
 - system memory 3-2
- address conflicts 5-7
- administrator password option 4-15
- advanced power management option 4-21
- advanced setup option 4-18
- advanced video memory option 4-18
- air filters 4-2
- amplitude-shift keying (ASK) 6-8
- APM BIOS mode option 4-22
- application-specific drivers 4-23
- assignments, serial port 4-26
- automatic power management (APM) 4-22

B

- backplane
 - connectors C-4
 - removing and replacing 7-49
- backplane parts 8-2
- backplane, removing and replacing 7-49
- battery failure error message 5-10
- battery, memory-retention 4-25
- battery, replacing 7-48
- beep symptoms 7-20
- beeps, POST 7-3
- BIOS level 7-2
- BIOS, updating 4-31
- blank screen 5-5
- boot error, hard disk 7-33
- broken cover lock 5-6
- bus card connectors C-4

C

- C2 security 4-4
- cable connectors C-4
- cables
 - disconnecting 7-34
 - part numbers 8-9
- cables, connecting 2-2
- cache control option 4-18

- card
 - connectors C-4
 - hold-down spacers 3-6
- change
 - configuration information 4-6, 4-9
 - logical unit numbers 7-8
 - selected tests in test groups 7-9
 - serial port assignments 4-26
- channel assignments, DMA D-2
- chassis or cover intrusion 4-4
- check voltage range 2-1
- checkouts
 - beeps 7-20
 - display 7-18
 - general 7-11
 - keyboard 7-12
 - Module Tests Menu 7-6
 - no beeps 7-21
 - power supply 7-16
 - power-supply connections 7-17
 - printer 7-15
 - USB port 7-13
- code page 4-31
- color graphics adapter (CGA) 4-30
- color, high resolution 4-30
- command-line options 7-7
- communications 4-27
- component layout 1-2
- COMx settings (serial port) 4-26
- configuration
 - 7588 Computer 4-1
 - activity monitor 4-22
 - administrator password 4-15
 - advanced power management 4-21
 - advanced setup 4-18
 - APM BIOS mode 4-22
 - cache control 4-18
 - changing 4-6
 - conflicts 4-5
 - date and time 4-13
 - device change 5-13
 - DMA resources 4-21
 - drive security option 4-14
 - errors 4-5
 - Ethernet setup 4-18
 - hardware change 5-9
 - I/O port resources 4-20
 - interrupt resources 4-21
 - ISA legacy resources 4-19
 - memory change 5-13
 - memory resources 4-20
 - overview 4-5

configuration (*continued*)

- PCI control 4-19
- plug and play control 4-19
- power-on password 4-15
- product data 4-9
- ROM shadowing 4-19
- start options 4-16
- system security 4-14
- system summary option 4-9
- USB setup 4-18
- utility program 4-6
- video 4-31
- video memory setup 4-18
- viewing information 4-9
- watchdog/thermal setup 4-18
- Configuration/Setup Utility program
 - activity monitor option 4-22
 - administrator password option 4-15
 - advanced power management option 4-21
 - advanced setup 4-18
 - APM BIOS mode option 4-22
 - cache control option 4-18
 - date and time option 4-13
 - description 5-1
 - devices and I/O ports option 4-10
 - DMA resources 4-21
 - drive security option 4-14
 - Ethernet setup 4-18
 - hard disk drive option 4-12
 - I/O port resources 4-20
 - IDE drives setup option 4-12
 - interrupt resources option 4-21
 - ISA legacy resources 4-19
 - main menu screen 4-8
 - memory resources option 4-20
 - moving around in the screens 4-8
 - PCI control option 4-19
 - plug and play control 4-19
 - power-on password 4-15
 - product data option 4-9
 - ROM shadowing 4-19
 - run 2-4
 - service procedures 7-1
 - start options 4-16
 - starting 4-7
 - system security option 4-14
 - system summary 4-9
 - USB setup 4-18
 - use 4-6
 - video setup option 4-12
 - watchdog/thermal setup 4-18
- conflicts, eliminating assignment 5-7
- connecting cables 2-2
- connectivity E-15
- connectors
 - backplane, model 001 C-4

connectors (*continued*)

- backplane, model 101 C-5
- bus card C-4
- cable C-4
- SBC 6-5
- USB port 6-8
- core voltage, processor 6-14
- cover intrusion connector 6-10
- cover intrusion detection 4-4
- cover lock, broken 5-6
- cover, remove 3-2
- covers (FRUs) 8-7

D

- data, transferring 4-27
- date and time option 4-13
- date and time, setting 4-13
- detecting POST errors 5-1, 5-2
- detection, cover intrusion 4-4
- device configuration error 5-13
- device drivers
 - adding 2-2, 2-4
 - application specific 4-23
 - device specific 4-23
 - downloading 7-2
 - installing 2-2, 2-4
 - overview 4-23
 - video 4-30
- device records A-1
- devices and I/O ports option 4-10
- devices, handling discharge-sensitive E-13
- diagnostic
 - beep codes 7-20
 - command-line options 7-7
 - diskette 7-4
 - error messages 5-2, 7-4, 7-26
 - program 7-4
 - QAPLus/PRO program 7-5
 - starting diagnostic program 7-8
 - tests, extended memory 7-8
 - tools 5-1, 7-3
- dimensions
 - See physical dimensions
- DIMMs, installing 3-2
- direct memory access (DMA) channel
 - assignments 4-23, 4-24, D-2
- discharge-sensitive devices, handling E-13
- disconnecting cables 7-34
- diskette
 - diagnostic programs 5-3
 - Diagnostics 5-1
 - drive access 4-3
 - drive in-use lights 5-4
 - drive replacement 7-37
 - parts 8-4

- diskette (*continued*)
 - parts catalog 8-4
 - security option 4-14
 - starting the diagnostic program 7-8
 - update 4-31
- diskettes drives, security 4-14
- display
 - blank screen 5-5
 - checkout 7-18
 - distorted screen 5-5
 - error codes 5-2, 5-8
 - jitter 5-5
 - problems 5-5, 5-8
 - rolling screen 5-5
 - selecting 4-30
 - self-tests 5-4
 - support 4-31
 - SVGA 4-30
 - wavy screen 5-5
- display power management signaling (DPMS) 6-3
- DMA channel assignments 4-23, 4-24, D-2
- DMA resources option 4-21
- downloading programs 7-2
- DPMS
 - See display power management signaling (DPMS)
- drives
 - CD-ROM 8-4
 - CD-ROM drive replacement 7-37
 - diskette 8-4
 - diskette drive replacement 7-37
 - hard disk 4-12
 - hard disk (FRUs) 8-7
 - hard disk boot error 7-33
 - hard disk jumper settings C-2
 - in-use lights 5-4
 - installing external device 4-28
 - installing internal 3-9
 - replacing hard disk 7-38
 - security option 4-14
- dual inline memory modules (DIMMs) 3-2

E

- EEPROM code, updating 4-31
- EEPROM, Flash 4-31
- electrical safety E-9
- electronic emission E-15
- electrostatic devices, handling E-13
- emission, electronic E-15
- enhanced graphics adapter (EGA) 4-30
- environment 1-4
- error recovery timer 4-29
- errors
 - battery failure 5-10
 - beep symptoms 7-20
 - code format, POST 7-4

- errors (*continued*)
 - configuration 4-5
 - detecting POST 5-2
 - device configuration 5-13
 - diagnostic 5-9
 - hard disk boot error 7-33
 - memory configuration 5-13
 - message types 7-4
 - messages 5-2, 5-8, 5-9, 7-26
 - numeric codes 7-22
 - POST 4-6, 5-2, 5-9, 5-10
 - prompt 5-8
 - software 5-9
 - types of messages 7-4
- Ethernet access 4-3
- Ethernet setup option 4-18
- external serial devices, installing 4-26

F

- fan (power supply) problems 5-6
- fans and filters parts 8-6
- feature cards, replacing 7-36
- field-replaceable units (FRUs)
 - CD-ROM drive 8-4
 - diskette drive 8-4
 - part numbers
 - backplane 8-2
 - cables 8-9
 - covers 8-7
 - fans and filters 8-6
 - hard disk drives 8-7
 - keyboards 8-9
 - mounting 8-8
 - mouse 8-9
 - power cord 8-10
 - SBC 8-2
- removing and replacing
 - adapters 7-36
 - backplane 7-49
 - battery 7-48
 - CD-ROM drive 7-37
 - diskette drive 7-37
 - front fan 7-39
 - hard disk drive 7-38
 - LED assembly 7-40
 - memory modules 7-46
 - power supply 7-38
 - power switch 7-40
 - processor chip 7-43
 - SBC 7-40
- Flash (BIOS/VPD) update procedure 7-2
- flash, verifying revision level 4-31
- flicker 4-30
- floor-stand dimensions B-3

floor-stand kits, parts 8-8
front fan, replacing 7-39

G

general checkout 7-11
general problems 5-6
general safety E-8
graphics 4-30
grounding requirements E-13
guide, safety inspection E-12

H

handling static-sensitive devices E-13
hard disk
 bad sector 5-8
 boot error 7-33
 drive access 4-3
 jumper settings C-2
 parts 8-7
 parts catalog 8-7
 replacing 7-38
 security option 4-14
 testing 5-8
hardware
 diagnostic error messages 7-26
 problems 5-1, 7-3
 testing programs 5-1
heat output 1-4
high-resolution color 4-30
hold-down, card spacers 3-6
host-bus interface 6-3
hub, USB port 4-29

I

I/O port resources option 4-20
I/O ports, configuration information 4-10
IBM SBC
 See single-board computer (SBC)
IDE drives setup option 4-12
in-use lights 5-4
indicator lights problem 5-6
indicators, SBC 6-3
industry-standard architecture (ISA)-bus adapters D-1
infrared port (IrDA) 6-8
inspection guide, safety E-12
install
 7588 Computer 2-1
 adapters 3-6
 application programs 4-3
 card hold-down spacers 3-6
 device drivers 2-2, 2-4
 external parallel devices 4-28
 external serial devices 4-26

install (*continued*)
 internal drive 3-9
 internal options 2-2
 memory modules 3-2
 options 3-1
 parallel devices, external 4-28
 RAM upgrade 3-2
 SBC 3-2
 serial devices, external 4-26
interface standard, serial IR 6-8
intermittent problems 5-6
internal drive, installing 3-9
Internet address 7-2
interrupt
 and DMA assignments D-1
 conflicts 5-7
 request assignments 4-24, D-1
 thermal monitor 4-29
 watchdog timer 4-29
interrupt resources option 4-21
intrusion connector, cover 6-10
ISA legacy resources 4-19
ISA-bus adapters D-1

J

jumpers
 description C-1
 processor speed switches 6-13
jumpers and switches, SBC 4-24

K

keyboard
 checkout 7-12
 problems 5-6
keyboard part numbers 8-9
keyboard problems 5-6
keyboardless operation mode 4-4
kits, installing memory upgrade 3-2

L

languages 4-31
layout
 7588 Computer 1-2
 SBCs 6-2
LED assembly, replacing 7-40
LEDs 4-1
lights
 in-use 5-4
 not working 5-6
lithium battery 4-25
lock for cover, broken 5-6
logical unit numbers, changing 7-8

M

- mass storage device configuration information 4-12
- MCGA (multicolor graphics array) 4-30
- memory
 - configuration error 5-13
 - diagnostic tests 7-8
 - installing RAM 3-2
 - replacing 7-46
 - SBC 6-2
- memory architecture, unified 6-3
- memory resources option 4-20
- memory setup option, video 4-18
- Memory Test Group 7-8
- memory-retention battery 4-25
- memory, adding 3-2
- menu, module tests 7-6
- messages
 - battery failure error 5-10
 - beep/blink patterns 7-4
 - device configuration error 5-13
 - diagnostic error 5-9, 7-4, 7-26
 - enter password prompt 5-2
 - error 5-2, 7-4
 - memory configuration error 5-13
 - multiple 7-4
 - POST error 5-1, 5-2, 5-10, 7-4
 - software-generated 7-4
 - types of error 7-4
- miscellaneous connectors 6-10
- module tests
 - running selected 7-9
 - selection 7-8
- Module Tests Menu 7-6
- monitor, thermal/watchdog 4-29
- mouse part numbers 8-9
- mouse problems 5-6

N

- no beeps 7-21
- notices E-1
- numeric error codes 7-22

O

- on/off switch 4-1
- opening 7588 Computer 3-2, 7-35
- operator information 4-1
- options
 - adding 3-1
 - problems 5-7
- overview of 7588 Computer 1-1

P

- panel-mount dimensions B-2
- panel-mount kits, parts 8-8
- parallel devices, external 4-28
- parallel port assignments 4-27
- parallel port mode, changing 4-28
- parts catalog 8-1
 - backplane 8-2
 - cables 8-9
 - CD-ROM drive 8-4
 - covers 8-7
 - diskette drive 8-4
 - fans and filters 8-6
 - floor-stand kit 8-8
 - hard disk drives 8-7
 - keyboards 8-9
 - mouse 8-9
 - panel-mount kit 8-8
 - power cord 8-10
 - rack-mount kit 8-8
 - SBC 8-2
- passwords
 - administrator 4-15
 - power-on 4-3, 4-15, 5-2, 5-6
 - prompt 5-8
 - removing 4-4
 - system administrator 4-4
- PCI control option 4-19
- physical dimensions
 - with floor-stand B-3
 - with panel-mount B-2
 - with rack-mount B-1
- pin assignments, serial port C-8
- plug and play control 4-19
- pointing-device problems 5-6
- port access, USB 4-3
- port assignment conflicts 5-7
- ports, configuring I/O 4-10
- POST
 - See power-on self-test (POST)
- power cord part numbers 8-10
- power supply
 - checkout 7-16
 - connections, SBC 7-17
 - fan problems 5-6
 - replacing 7-38
 - specifications 1-4, 4-1
- power switch
 - feature 4-1
 - replacing 7-40
- power-on password 5-2, 5-6
- power-on password option 4-15
- power-on problems 5-2, 5-7
- power-on self-test (POST)
 - battery failure error 5-10

power-on self-test (POST) *(continued)*

- beeps 7-3
- description 5-1
- detecting problems 7-3
- error 4-6
- error detection 5-1, 5-2
- error messages 5-2, 5-10
- operation 5-1, 5-2
- problem detecting 7-3
- updating 4-31

power, switching off 7-34

printer

- checkout 7-15
- problems 5-8

problems

- diskette drive 5-4
- display 5-5
- error prompt 5-8
- fan 5-6
- forgotten power-on password 5-6
- general 5-6
- hardware 5-1
- hardware related 7-3
- intermittent 5-6
- keyboard 5-6
- mouse 5-6
- no beeps 5-5
- occasional 5-6
- options 5-7
- overview 5-1
- password prompt 5-8
- pointing-device 5-6
- power-on 5-2, 5-7
- printer 5-8
- screen distortion 5-5
- screen jitter 5-5
- screen roll 5-5
- software 5-1, 5-9
- solving 5-1, 5-2
- troubleshooting charts 5-4
- undetermined 7-33
- user error 5-1
- wrong number of beeps 5-5
- wrong screen characters 5-5

processor chip, removing and replacing 7-43

processor voltage selection 6-14

product data option 4-9

program

- Configuration/Setup Utility 5-1
- diagnostic 5-1, 5-3
- navigation 7-6
- power-on self-test (POST) 5-1
- program, diagnostic 7-4
- QAPlus/PRO 7-5
- system 4-6, 4-31
- test 7-5

program *(continued)*

- utility 4-6

Q

QAPlus/PRO diagnostic program 7-5

R

rack-mount dimensions B-1

rack-mount kit, parts 8-8

RAM upgrade kits, installing 3-2

range, voltage 2-1

records, device A-1

remove and replace

- adapters 7-36
- backplane 7-49
- battery 7-48
- CD-ROM drive 7-37
- diskette drive 7-37
- front fan 7-39
- hard disk drive 7-38
- LED assembly 7-40
- memory modules 7-46
- power supply 7-38
- power switch 7-40
- procedures for 7-1, 7-34
- processor chip 7-43
- SBC 7-40

remove cover 3-2

removing the system unit from its mounting 7-35

replacement parts 8-1

requirements, grounding E-13

resolutions, VGA/SVGA 4-30

restore configuration 4-6

revision level, verifying flash 4-31

ROM (read-only memory) 4-31

ROM shadowing 4-19

run selected module tests 7-9

S

safety

- electrical E-9
- general E-8
- information E-8
- inspection guide E-12

scripting 7-8

security features 4-3

security option, drive 4-14

selected module tests, running 7-9

selected tests in test groups, changing 7-9

self-tests, internal 5-1, 5-2

sensor, temperature 4-29

serial devices, external 4-26

- serial IR (SIR) standards 6-8
- serial IR standards 6-8
- serial port 4-25
- serial port assignments 4-26
- serial port pin assignments C-8
- service diagnostic program 7-4
- service information 7-1
- set date and time 4-13
- shadow ROM 4-19
- SIMMs, installing 3-2
- single-board computer (SBC)
 - component layout 6-2
 - connectors 6-5
 - features 6-1
 - indicators 6-3
 - installing 3-2
 - jumpers and switches 4-24
 - memory subsystem 6-2
 - memory upgrade 3-2
 - part numbers 8-2
 - parts catalog 8-2
 - power-supply connections 7-17
 - remove 3-2
 - removing and replacing 7-40
 - switch functions 6-12, C-7
 - updating flash EEPROM 4-31
 - video subsystem 6-3
- slow IR (SIR) standard 6-8
- software
 - errors 5-9
 - problems 5-1, 5-2
- solving problems 5-1
- spacers, card hold-down 3-6
- special characters 4-31
- specifications 1-4
- start
 - Configuration/Setup Utility program 4-7
 - diagnostic programs 5-3
 - system unit 5-2
- start options 4-16
- startup-sequence control 4-4
- static-sensitive devices, handling E-13
- stopping tests 7-10
- storage device, mass, configuration information 4-12
- SVGA
 - advantages 4-30
 - description 4-30
 - languages 4-31
 - software compatibility 4-30
 - special characters 4-31
 - video configuration 4-31
- switch
 - on/off 4-1
 - processor speed 6-13
 - SBC 6-12, C-7
 - voltage-selection 5-2

- switching off power 7-34
- symptom-to-FRU index 7-19
- symptoms, beep 7-20
- symptoms, no beeps 7-21
- system memory, installing 3-2
- system memory, replacing 7-46
- system security option 4-14
- system summary option 4-9

T

- test group, memory 7-8
- test groups, viewing 7-7
- test program, hardware 5-1
- test programs
 - diagnostic 7-5
 - using 7-5
- test scripts 7-8
- test the system unit 5-2
- tests menu, module 7-6
- tests, stopping 7-10
- thermal monitor 4-29
- time and date, setting 4-13
- timer, watchdog 4-29
- tools, diagnostic 5-1
- trademarks and service marks E-19
- transferring data 4-27
- troubleshooting charts 5-4

U

- undetermined problems 7-33
- unified memory architecture 6-3
- universal serial bus (USB)
 - port checkout 7-13
 - port connector 6-8
 - ports 4-29
 - setup option 4-18
- update
 - flash EEPROMs 4-31
 - system programs diskette 4-31
 - system unit configuration 4-6
- update programs, downloading 7-2
- user error problems 5-1
- using QAPLus/PRO program 7-5
- using test programs 7-5
- utility program, Configuration/Setup 4-6

V

- verifying flash revision level 4-31
- vertical-refresh rate 4-31
- video
 - configuration 4-31
 - device drivers 2-4
 - standards 4-30

- video connector 6-9
- video graphics subsystem 6-3
- video memory setup option 4-18
- video setup option 4-12
- vital product data code 7-2
- voltage range 2-1
- voltage selection, processor C-7
- voltage selection, processor core 6-14
- voltage-selection switch 5-2

W

- watchdog timer 4-29
- watchdog/thermal setup option 4-18
- Web site 7-2