
Index

A

- accessing Configuration/Setup Utility program 4-7
- activity monitor option 4-22
- adapter slot position 3-5
- adapters, installing 3-8
- adapters, replacing 8-37
- add
 - cache memory 3-6
 - drivers 2-2
 - internal drive 3-11
 - memory module kits 3-4
 - memory modules 3-4
 - SBC 3-3
 - system memory 3-4
- address conflicts 5-7
- administrator password option 4-15
- advanced CPU setup option 4-18
- advanced power management option 4-21
- advanced setup option 4-17
- air filters 4-2
- Analog Video PMC Form Factor Card
 - See PMC video card
- APM BIOS mode option 4-21
- application-specific drivers 4-22
- assignments, serial port 4-25
- automatic power management (APM) 4-22

B

- backplane
 - connectors C-4
 - removing and replacing 8-48
- backplane parts 9-2
- backplane, removing and replacing 8-48
- battery failure error message 5-10
- battery, memory-retention 4-24
- beep symptoms 8-21
- beeps, POST 8-3
- BIOS level 8-2
- BIOS, updating 4-31
- blank screen 5-5
- boot error, hard disk 8-34
- broken cover lock 5-6
- bus card connectors C-4

C

- cable connectors C-4
- cables
 - disconnecting 8-35
 - part numbers 9-9

- cables, connecting 2-2
- cache control option 4-18
- cache memory, installing 3-6
- CAD Panacea video drivers, installing E-6
- card
 - connectors C-4
 - hold-down spacers 3-9
- change
 - configuration information 4-6, 4-9
 - logical unit numbers 8-8
 - resolutions E-3, E-4
 - selected tests in test groups 8-9
 - serial port assignments 4-26
- channel assignments, DMA D-2
- check voltage range 2-1
- checkouts
 - beeps 8-21
 - display 8-19
 - general 8-10
 - keyboard 8-12
 - Module Tests Menu 8-6
 - no beeps 8-22
 - power supply 8-17
 - power-supply connections 8-18
 - printer 8-16
 - USB port 8-14
- code page 4-31
- color graphics adapter (CGA) 4-30
- color, high resolution 4-30
- COM1 serial port 4-25
- command-line options 8-7
- communications 4-26
- component layout
 - 586 and 586E SBCs 6-2
 - 586U and 586EU SBCs 6-3
 - 7588 Industrial Computer 1-3
- configuration
 - 7588 Industrial Computer 4-1
 - activity monitor 4-22
 - administrator password 4-15
 - advanced power management 4-21
 - advanced setup 4-17
 - APM BIOS mode 4-21
 - cache control 4-18
 - changing 4-6
 - conflicts 4-5
 - CPU advanced setup 4-18
 - date and time 4-14
 - device change 5-13
 - DMA resources 4-20
 - drive security option 4-15
 - errors 4-5

configuration (*continued*)

- 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 4-19
- overview 4-5
- PCI bus 0 data 4-10
- PCI control 4-18
- plug and play control 4-18
- power-on password 4-15
- product data 4-9
- ROM shadowing 4-18
- start options 4-16
- system security 4-14
- system summary 4-9
- USB setup 4-18
- utility program 4-6
- video 4-31
- 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 4-17, 4-18
- APM BIOS mode option 4-21
- cache control option 4-18
- date and time option 4-14
- description 5-1
- devices and I/O ports option 4-10
- DMA resources 4-20
- drive security option 4-15
- ethernet setup 4-18
- hard disk drive option 4-13
- I/O port resources 4-20
- IDE drives setup option 4-13
- interrupt resources option 4-21
- ISA legacy resources 4-19
- main menu screen 4-8
- memory resources option 4-19
- moving around in the screens 4-8
- options

- activity monitor 4-22
- administrator password 4-15
- advanced power management 4-21
- advanced setup 4-17
- APM BIOS mode 4-21
- cache control 4-18
- CPU advanced setup 4-18
- date and time 4-14
- devices and I/O ports 4-10
- DMA resources 4-20
- drive security option 4-15
- ethernet setup 4-18

Configuration/Setup Utility program (*continued*)

options (*continued*)

- hard disk drive 4-13
- I/O port resources 4-20
- IDE drives setup 4-13
- interrupt resources 4-21
- ISA legacy resources 4-19
- memory resources 4-19
- PCI bus 0 data 4-10
- PCI control 4-18
- plug and play control 4-18
- power-on password 4-15
- product data 4-9
- ROM shadowing 4-18
- start options 4-16
- system security 4-14
- system summary 4-9
- USB setup 4-18
- video setup 4-12
- watchdog/thermal setup 4-18

PCI bus 0 data 4-10

PCI control option 4-18

plug and play control 4-18

power-on password 4-15

product data option 4-9

ROM shadowing 4-18

run 2-3

selecting a monitor E-2

service procedures 8-1

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 F-2

connectors

- backplane, model 001 C-4

- backplane, model 101 C-5

- bus card C-4

- cable C-4

- PMC video card 7-1

- SBC 6-6

- USB port 6-12

cover lock, broken 5-6

cover, remove 3-2

covers (FRUs) 9-7

CPU setup option 4-18

D

- data, transferring 4-26
- date and time option 4-14
- date and time, setting 4-14
- default resolutions E-1
- detecting POST errors 5-1, 5-2
- device configuration error 5-13
- device drivers
 - adding 2-2
 - application specific 4-22
 - device specific 4-22
 - installing 2-2
 - installing CAD Panacea E-6
 - installing MicroStation PC E-7
 - installing OS/2 E-5
 - installing Windows 3.1 E-2
 - installing Windows 95 E-4
 - installing Windows NT E-5
 - overview 4-22
 - S3 Trio64V+ video E-1
 - video 4-29
- device drivers, downloading 8-2
- device records A-1
- devices and I/O ports option 4-10
- devices, handling discharge-sensitive F-16
- diagnostic
 - command-line options 8-7
 - diskette 5-1
 - error messages 5-2, 5-13
 - errors 5-9
 - programs 5-1
 - QAPLus/PRO program 8-5
 - starting diagnostic program 8-8
 - tests, extended memory 8-8
 - tools 5-1, 8-3
- dimensions
 - See physical dimensions
- DIN (Deutsches Institut für Normung) connector 6-10
- direct memory access (DMA) channel
 - assignments 4-23, 4-24, D-2
- discharge-sensitive devices, handling F-16
- disconnecting cables 8-35
- diskette
 - diagnostic programs 5-3
 - Diagnostics 5-1
 - drive access 4-3
 - drive in-use lights 5-4
 - drive replacement 8-38
 - parts 9-4
 - parts catalog 9-4
 - security option 4-15
 - starting the diagnostic program 8-8
 - update 4-31
- diskettes drives, security 4-15

display

- blank screen 5-5
- checkout 8-19
- 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 4-30
- SVGA 4-29
- wavy screen 5-5

DMA channel assignments 4-23, 4-24, D-2

DMA resources option 4-20

downloading programs 8-2

drives

- CD-ROM 9-4
- CD-ROM drive replacement 8-38
- diskette 9-4
- diskette drive replacement 8-38
- hard disk 4-13
- hard disk (FRUs) 9-7
- hard disk boot error 8-34
- hard disk jumper settings C-2
- in-use lights 5-4
- installing external device 4-27
- installing internal 3-11
- replacing hard disk 8-39
- security option 4-15

E

- EEPROM, Flash 4-31
- electrical safety F-12
- electronic emission F-2
- electrostatic devices, handling F-16
- emission, electronic F-2
- enhanced graphics adapter (EGA) 4-30
- environment 1-5
- error recovery timer 4-29
- errors
 - battery failure 5-10
 - beep symptoms 8-21
 - code format, POST 8-4
 - configuration 4-5
 - detecting POST 5-2
 - device configuration 5-13
 - diagnostic 5-9, 5-13
 - hard disk boot error 8-34
 - memory configuration 5-13
 - message types 8-4
 - messages 5-2, 5-8, 5-9, 8-27
 - numeric codes 8-23
 - POST 4-6, 5-2, 5-9, 5-10
 - prompt 5-8

errors (*continued*)
 software 5-9
 types of messages 8-4
ethernet setup option 4-18
external power connector 6-14
external serial devices, installing 4-26

F

fan (power supply) problems 5-6
fans and filters parts 9-6
feature cards, replacing 8-37
field-replaceable units (FRUs)
 backplane 9-2
 cables 9-9
 CD-ROM drive 9-4
 covers 9-7
 diskette drive 9-4
 fans and filters 9-6
 floor-stand kit 9-8
 hard disk drives 9-7
 keyboards 9-9
 mouse 9-9
 numbers 9-1
 panel-mount kit 9-8
 parts catalog 9-1
 power cord 9-10
 rack-mount kit 9-8
 SBC 9-2
Flash (BIOS/VPD) update procedure 8-2
flash, updating 4-31
flash, verifying revision level 4-31
flicker 4-29
floor-stand dimensions B-3
floor-stand kits, parts 9-8
front fan, replacing 8-40

G

general checkout 8-10
general problems 5-6
general safety F-11
graphics 4-29
grounding requirements F-16
guide, safety inspection F-15

H

handling electrostatic-discharge-sensitive devices F-16
handling static-sensitive devices F-16
hard disk
 bad sector 5-8
 boot error 8-34
 drive access 4-3
 jumper settings C-2
 parts 9-7

hard disk (*continued*)
 parts catalog 9-7
 replacing 8-39
 secure drives 4-15
 security option 4-15
 testing 5-8
hardware
 diagnostic error messages 5-13
 problems 5-1, 8-3
 testing programs 5-1
heat output 1-5
high-resolution color 4-30
hold-down, card spacers 3-9
home page, Internet 8-2
hub, USB port 4-28

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 4-13
in-use lights 5-4
indicator lights problem 5-6
indicators, SBC 6-4
industry-standard architecture (ISA)-bus adapters D-1
inspection guide, safety F-15
install
 7588 Industrial Computer 2-1
 adapters 3-8
 application programs 4-3
 cache memory 3-6
 CAD Panacea video drivers E-6
 card hold-down spacers 3-9
 device drivers 2-2
 external parallel devices 4-27
 external serial devices 4-26
 internal drive 3-11
 internal options 2-2
 memory modules 3-4
 MicroStation PC video drivers E-7
 options 3-1
 OS/2 video drivers E-5
 parallel devices, external 4-27
 RAM memory module kits 3-4
 S3 Trio64V+ driver E-1
 SBC 3-3
 serial devices, external 4-26
 Windows 3.1 video drivers E-2
 Windows 95 video drivers E-4
 Windows NT video drivers E-5
intermittent problems 5-6
internal drive, installing 3-11
Internet address 8-2

- interrupt
 - and DMA assignments D-1
 - conflicts 5-7
 - request assignments 4-23, D-1
 - thermal monitor 4-29
 - watchdog timer 4-29
- interrupt resources option 4-21
- ISA legacy resources 4-19
- ISA-bus adapters D-1

J

- jumper block 6-14
- jumpers
 - description C-1
 - processor speed switches 6-17
 - processor voltage 6-15
 - SBC 6-15
- jumpers and switches, SBC 4-24

K

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

L

- languages 4-31
- layout
 - 586 and 586E SBCs 6-2
 - 586U and 586EU SBCs 6-3
 - 7588 Industrial Computer 1-3
- LED assembly, replacing 8-41
- LEDs 4-1
- lights
 - in-use 5-4
 - not working 5-6
- lithium battery 4-24
- lock for cover, broken 5-6
- logical unit numbers, changing 8-8

M

- mass storage device configuration information 4-13
- MCGA (multicolor graphics array) 4-30
- memory
 - configuration error 5-13
 - diagnostic tests 8-8
 - installing RAM 3-4
 - SBC 6-4
- memory resources option 4-19

- Memory Test Group 8-8
- memory-retention battery 4-24
- memory, adding 3-4
- menu, module tests 8-6
- messages
 - battery failure error 5-10
 - beep/blink patterns 8-4
 - device configuration error 5-13
 - diagnostic error 5-9, 5-13, 8-4
 - enter password prompt 5-2
 - error 5-2, 8-27
 - memory configuration error 5-13
 - multiple 8-4
 - POST error 5-1, 5-2, 5-10, 8-4
 - software-generated 8-4
 - types of error 8-4
- MicroStation PC video drivers, installing E-7
- miscellaneous connectors 6-13
- module tests
 - running selected 8-9
- Module Tests Menu 8-6
- module tests selection 8-8
- monitor, selecting E-2
- monitor, thermal/watchdog 4-29
- mounting 7588 Industrial Computer 2-2
- mouse part numbers 9-9
- mouse problems 5-6

N

- no beeps 8-22
- notices F-1
- numeric error codes 8-23

O

- on/off switch 4-1
- open
 - system unit 8-36
- open 7588 Industrial Computer 3-2
- operator information 4-1
- options
 - adding 3-1
 - problems 5-7
- options, adding 3-1
- OS/2 video drivers, installing E-5
- overview of 7588 Industrial Computer 1-1

P

- panel-mount dimensions B-2
- panel-mount kits, parts 9-8
- parallel devices, external 4-27
- parallel port assignments 4-27
- parallel port mode, changing 4-27

- parts
 - See field-replaceable units (FRUs)
- parts catalog 9-1
 - enhanced keyboard (TrackPoint II) 9-9
 - keyboard cable 9-9
- parts warranty 9-1
- passwords
 - administrator 4-15
 - keyboard 4-4
 - power-on 4-3, 4-15, 5-2, 5-6
 - prompt 5-8
 - removing 4-4
 - system administrator 4-3
- PCI bus 0 data option 4-10
- PCI control option 4-18
- physical dimensions
 - with floor-stand B-3
 - with panel-mount B-2
 - with rack-mount B-1
- pin assignments, serial port C-9
- plug and play control 4-18
- PMC video card
 - features 7-1
 - removing and replacing 8-47
- pointing-device problems 5-6
- port assignment conflicts 5-7
- ports, configuring I/O 4-10
- POST
 - See power-on self-test (POST)
- power cord part numbers 9-10
- power supply
 - checkout 8-17
 - connections, SBC 8-18
 - fan problems 5-6
 - replacing 8-39
 - specifications 1-5, 4-1
- power switch
 - feature 4-1
 - replacing 8-41
- 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
 - beeps 8-3
 - description 5-1
 - detecting problems 8-3
 - error 4-6
 - error detection 5-1, 5-2
 - error messages 5-2, 5-10
 - operation 5-1, 5-2
 - problem detecting 8-3
 - updating 4-31
- power, switching off 8-35
- printer
 - checkout 8-16
- printer *(continued)*
 - 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 8-3
 - 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 8-34
 - user error 5-1
 - wrong number of beeps 5-5
 - wrong screen characters 5-5
- processor chip, removing and replacing 8-44
- product data option 4-9
- program
 - Configuration/Setup Utility 5-1
 - diagnostic 5-1, 5-3
 - navigation 8-6
 - power-on self-test (POST) 5-1
 - QAPlus/PRO 8-5
 - system 4-6, 4-31
 - test 8-5
 - utility 4-6

Q

QAPlus/PRO diagnostic program 8-5

R

rack-mount dimensions B-1
 rack-mount kit, parts 9-8
 RAM memory module kits, installing 3-4
 range, voltage 2-1
 records, device A-1

- remove and replace
 - adapters 8-37
 - backplane 8-48
 - CD-ROM drive 8-38
 - diskette drive 8-38
 - feature cards 8-37
 - front fan 8-40
 - hard disk drive 8-39
 - LED assembly 8-41
 - PMC video card 8-47
 - power supply 8-39
 - power switch 8-41
 - procedures for 8-1, 8-35
 - processor chip 8-44
 - SBC 8-42
- remove cover 3-2
- removing the system unit from its mounting 8-36
- replacement parts 9-1
- requirements, grounding F-16
- resolutions
 - changing E-3, E-4
 - default E-1
 - VGA/SVGA 4-29
- restore configuration 4-6
- revision level, verifying flash 4-31
- ROM (read-only memory) 4-31
- ROM shadowing 4-18
- run selected module tests 8-9

S

- S3 Trio64V+ driver, installing E-1
- safety
 - electrical F-12
 - general F-11
 - information F-11
 - inspection guide F-15
- scripting 8-8
- security features 4-3
- security option, drive 4-15
- select monitor E-2
- selected module tests, running 8-9
- selected tests in test groups, changing 8-9
- self-tests, internal 5-1, 5-2
- sensor, temperature 4-29
- serial devices, external 4-26
- serial port 4-25
- serial port assignments 4-26
- serial port pin assignments C-9
- service
 - information 8-1
 - parts warranty 9-1
- set date and time 4-14
- shadow ROM 4-18
- SIMMs (single inline memory modules) 3-4

- SIMMs, installing 3-4
- single inline memory modules (SIMMs) 3-4
- single-board computer (SBC)
 - cache memory 3-6
 - component layout 6-2
 - connectors 6-6
 - features 6-1
 - indicators 6-4
 - installing 3-3
 - jumpers 6-15
 - jumpers and switches 4-24
 - memory subsystem 6-4
 - part numbers 9-2
 - parts catalog 9-2
 - power-supply connections 8-18
 - remove 3-4
 - removing and replacing 8-42
 - SIMMs 3-4
 - switch functions 6-16, C-7
 - updating flash EEPROM 4-31
- slot position, adapter 3-5
- software
 - errors 5-9
 - problems 5-1, 5-2
- solving problems 5-1
- spacers, card hold-down 3-9
- special characters 4-31
- specifications 1-5
- 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 F-16
- stopping tests 8-9
- storage device, mass, configuration information 4-13
- SVGA
 - advantages 4-29
 - description 4-29
 - languages 4-31
 - software compatibility 4-30
 - special characters 4-31
 - video configuration 4-31
- switch
 - on/off 4-1
 - processor speed 6-17
 - processor voltage jumpers 6-15
 - SBC 6-16, C-7
 - voltage-selection 5-2
- switching off power 8-35
- symptom-to-FRU index 8-20
- symptoms, beep 8-21
- symptoms, no beeps 8-22
- system memory, installing SIMMs 3-4

system security option 4-14
system summary option 4-9

T

test group, memory 8-8
test groups, viewing 8-7
test programs
 diagnostic 8-5
 hardware 5-1
 using 8-5
test scripts 8-8
test the system unit 5-2
tests menu, module 8-6
tests, stopping 8-9
thermal monitor 4-29
time and date, setting 4-14
timer, watchdog 4-29
tools, diagnostic 5-1
trademarks and service marks F-1
transferring data 4-26
troubleshooting charts 5-4

U

undetermined problems 8-34
universal serial bus (USB)
 port checkout 8-14
 port connector 6-12
 ports 4-28
 setup option 4-18
update
 flash EEPROMs 4-31
 system programs diskette 4-31
 system unit configuration 4-6
update programs, downloading 8-2
user error problems 5-1
using QAPLus/PRO program 8-5
using test programs 8-5
utility program, Configuration/Setup 4-6

V

verifying flash revision level 4-31
vertical-refresh rate 4-30
video
 configuration 4-31
 standards 4-30
video device drivers
 See also device drivers
 installing CAD Panacea E-6
 installing MicroStation PC E-7
 installing OS/2 E-5
 installing Windows 3.1 E-2
 installing Windows 95 E-4
 installing Windows NT E-5

video device drivers (*continued*)
 overview 4-22
video setup option 4-12
vital product data code 8-2
voltage range 2-1
voltage selection, processor C-7
voltage-selection switch 5-2

W

warranty service parts 9-1
watchdog timer 4-29
watchdog/thermal setup option 4-18
Web site 8-2
Windows video drivers, installing E-2, E-4, E-5



Part Number: 20L2782



Printed in the United States of America
on recycled paper containing 10%
recovered post-consumer fiber.

S20L-2782-00



20L2782

