



---

## A

- access-list compiled command [3-13](#)
- access lists [3-13](#)
- AC PEM faults [2-1 to 2-3](#)
- ACTIVE LED
  - OC-12 DPT/SRP [4-14](#)
  - TCC+ [4-9](#)
- alignment errors [3-15](#)
  - correctable [3-15](#)
  - fatal [3-16](#)
- alphanumeric display
  - list of messages [3-2](#)
  - messages [1-6](#)
- ARP traffic problems [3-9](#)

---

## B

- BERT [B-3](#)
- bit error rate testers [B-3](#)
- BLERT [B-3](#)
- block error rate testers [B-3](#)
- blower failures [2-7](#)
  - see also show commands
- blower module faults [2-7](#)
- breakout boxes [B-3](#)
- bus errors [3-13](#)
  - line cards [4-5](#)

---

## C

- cable arp command [3-10](#)
- cable clock clear-counters command [4-11](#)

- cable power command [4-8](#)
- cable proxy-arp command [3-10](#)
- cable testers [B-1](#)
- cache parity errors [4-4](#)
- Carrier LED
  - OC-12 POS [4-13](#)
- CD LED [4-16](#)
- Cisco IOS, displaying version [1-3](#)
- commands, unsupported [A-1](#)
- confreg command [7-2](#)
- console [3-6](#)
  - cable types [3-7](#)
- console port [3-7](#)
- console problems [3-7](#)
- copy startup-config running-config command [7-3](#)
- correctable alignment errors [3-15](#)
- crashes, line card [4-6](#)

---

## D

- DC PEM faults [2-3 to 2-5](#)
- debug messages [3-11](#)
- digital multimeters [B-1](#)
- displaying environmental information [1-4](#)
- displaying software version [1-3](#)
- documentation [viii](#)

---

## E

- electrical problems [2-6](#)
  - see also PEM faults
- ENABLE LED
  - OC-48 DPT/POS [4-16](#)

enable secret command [7-3](#)  
 environmental information, displaying [1-4](#)  
 Ethernet problems [3-6](#)  
 exec processes [3-11](#)

---

## F

### Fail LED

Gigabit Ethernet [4-19](#)  
 OC-12 POS line card [4-13](#)  
 OC-48 DPT/POS [4-16](#)  
 fallbacks [3-17](#)  
 fan assembly failures [2-7](#)  
 fatal alignment errors [3-16](#)  
 faults  
   PRE-1 module [3-5](#)  
 flowchart [1-4](#)  
 fox boxes [B-3](#)  
 frame relay commands [A-1](#)  
 FRUs [2-6](#)

---

## G

GBIC [4-18, 4-19](#)  
 Gigabit Ethernet  
   autonegotiation [4-19](#)  
   GBIC type [4-18](#)  
   LEDs [4-18](#)  
   troubleshooting [4-18](#)  
 Gigabit Ethernet interface converter (GBIC) [4-18](#)

---

## H

hard parity errors [3-17](#)  
 hardware  
   verifying [1-2](#)  
 HCCP commands [A-2](#)  
 hw-module reset command [4-10](#)

hw-module slot reset command [4-7](#)

---

## I

interrupts  
   spurious [3-18](#)  
 IP input processing [3-12](#)

---

## L

### LEDs

ACTIVE, OC-12 DPT/SRP [4-14](#)  
 ACTIVE, TCC+ [4-9](#)  
 alarm [3-6](#)  
 Carrier, OC-12 POS [4-13](#)  
 CD, OC-48 DPT/POS [4-16](#)  
 critical [1-6](#)  
 ENABLE, OC-48 DPT/POS [4-16](#)  
 Fail, Gigabit Ethernet [4-19](#)  
 Fail, OC-12 POS [4-13](#)  
 Fail, OC-48 DPT/POS [4-16](#)  
 Fail, PRE [1-6](#)  
 Fail, PRE-1 module [3-5](#)  
 Gigabit Ethernet [4-18](#)  
 line cards [4-12, 4-18](#)  
 Link, Gigabit Ethernet [4-19](#)  
 MAINTENANCE, OC-12 SRP/DPT [4-14](#)  
 MAINTENANCE, TCC+ [4-9](#)  
 Major [1-6](#)  
 Minor [1-6](#)  
 OC-12 DPT/SRP [4-14](#)  
 OC-12 POS [4-12](#)  
 PASS THRU, OC-48 DPT/POS [4-17](#)  
 PEM fault [1-6](#)  
 POS, OC-48 DPT/POS [4-16](#)  
 Power [1-6](#)  
 POWER, OC-12 DPT/SRP [4-14](#)  
 POWER, TCC+ [4-9](#)

PRE-1 module [3-4 to 3-6](#)  
 PRESENT, TCC+ [4-9](#)  
 RX, OC-48 DPT/POS [4-16](#)  
 RX CARRIER, OC-12 DPT/SRP [4-14](#)  
 RX PKTS, OC-12 DPT/SRP [4-14](#)  
 SRP, OC-48 DPT/POS [4-16](#)  
 Status [3-4](#)  
 STATUS, OC-12 DPT/SRP [4-14](#)  
 STATUS, TCC+ [4-9](#)  
 SYNC, OC-48 DPT/POS [4-17](#)  
 TCC+ [4-8](#)  
 transmit [4-12, 4-18](#)  
 TX, OC-48 DPT/POS [4-16](#)  
 WRAP, OC-48 DPT/POS [4-17](#)

line cards

- bus errors [4-5](#)
- cache parity errors [4-4](#)
- crashes [4-6](#)
- general troubleshooting [4-2](#)
- Gigabit Ethernet [4-18](#)
- LEDs [4-12, 4-18](#)
- OC-12 DPT/SRP [4-14](#)
- OC-12 POS [4-12](#)
- troubleshooting [4-1](#)

Link LED

- Gigabit Ethernet [4-19](#)

low memory errors [3-16](#)

---

## M

MAINTENANCE LED [4-14](#)

- TCC+ [4-9](#)

management Ethernet [3-6](#)

memory

- cache parity errors [4-4](#)
- parity errors [3-16](#)
- problems [3-15](#)
- spurious accesses [3-19](#)

MLPPP commands [A-2](#)

MPLS VPN commands [A-3](#)

---

## N

network analyzers [B-4](#)  
 network monitors [B-3](#)

---

## O

OC-12 DPT/SRP

- LEDs [4-14](#)
- troubleshooting [4-14](#)

OC-12 POS

- LEDs [4-12](#)
- troubleshooting [4-12](#)

OC-48 DPT/POS

- LEDs [4-16](#)
- troubleshooting [4-16](#)

optical time domain reflectometers [B-2](#)

OTDR [B-2](#)

overheating [2-7](#)

---

## P

parity errors [3-16](#)

- cache [4-4](#)
- hard [3-17](#)
- soft [3-17](#)

particle pool fallbacks [3-17](#)

PASS THRU LED

- OC-48 DPT/POS [4-17](#)

password recovery [7-1](#)

PEM faults [2-1](#)

- DC [2-3](#)

POS LED

- OC-48 DPT/POS [4-16](#)

power cables [2-6](#)

POWER LED

- OC-12 DPT/SRP 4-14
  - TCC+ 4-9
  - PPP commands A-3
  - PRE-1 module 3-1
    - alphanumeric display 1-6, 3-2
    - console connection 3-6
    - faceplate 3-5
    - fault indications 3-5
    - faults 3-4, 3-5
    - redundant modules 3-3
    - status screen 1-6, 3-2
    - support for PRE-1 module and not PRE module 3-2
  - PRE-1 module LEDs 3-4 to 3-6
    - description 3-5
    - fail LED 3-5
    - Status 3-4
    - unlit 3-5
  - PRE module
    - support for PRE-1 module and not PRE module 3-2
  - PRESENT LED
    - TCC+ 4-9
  - processes 3-12
- 
- R**
- recovering passwords 7-1
  - related documentation viii
  - reload command 7-1
  - reset command 7-2
  - RX CARRIER LED 4-14
  - RX LED
    - OC-48 DPT/POS 4-16
  - RX PKTS LED 4-14
- 
- S**
- scheduler allocate command 3-12
  - show commands
    - Output Interpreter 3-8, 3-15, 4-5
    - show buffers 3-18
    - show cable clock 4-8, 4-10
    - show context 4-2, 4-5
    - show controllers 4-11
    - show controllers clock-reference 4-8, 4-11
    - show diag 4-2, 4-8, 4-19
    - show environment 1-4, 2-1, 2-3
    - show facility-alarm status 3-6
    - show hardware 1-1, 1-2
    - show interface 3-6
    - show log 3-6, 4-2, 4-4, 4-5, 4-7
    - show processes cpu 4-6
    - show region 3-14
    - show stacks 3-15, 4-5
    - show startup-config 7-1
    - show tech-support 3-1, 3-15, 4-4, 4-5, 4-7
    - show version 1-3, 3-13, 3-16, 4-2, 7-1, 7-2
  - SIG type values 4-3
  - slot problems 3-6
  - soft parity errors 3-17
  - software forced crashes 4-6
  - software version, displaying 1-3
  - spectrum management commands A-3
  - spurious interrupts 3-18
  - spurious memory accesses 3-19
  - SRP LED
    - OC-48 DPT/POS 4-16
  - stack command 3-1
  - startup sequence 1-5
    - behavior 1-5
    - possible boot messages 3-2
  - STATUS LED 4-14
    - TCC+ 4-9
  - SYNC LED
    - OC-48 DPT/POS 4-17
  - system exception errors 4-3
  - system messages 3-11

**T**

## TCC+

LEDs [4-8](#)troubleshooting [4-8](#)TDR [B-2](#)telco-return commands [A-3](#)terminal settings [3-8](#)test equipment [B-1](#)time domain reflectometers [B-2](#)Timing, Communication, and Control Plus card, see also  
TCC+ cardtools and test equipment [B-1](#)

## troubleshooting

access lists [3-13](#)alignment errors [3-15](#)ARP traffic [3-9](#)basic checklist [1-1](#)bus errors [3-13, 4-5](#)cache parity errors [4-4](#)CPUHOG errors [3-11](#)debug and system messages [3-11](#)excessive interrupts [3-12](#)excessive processes [3-12](#)excessive SNMP traffic [3-13](#)flowchart [1-4](#)Gigabit Ethernet [4-18](#)hardware [1-4](#)high CPU utilization [3-9](#)IP input processing [3-12](#)line cards [4-1](#)low memory errors [3-16](#)memory parity errors [3-16](#)memory problems [3-15](#)OC-12 DPT/SRP [4-14](#)OC-12 POS [4-12](#)OC-48 DPT/POS [4-16](#)particle pool fallbacks [3-17](#)processes [3-11](#)redundant PRE-1 modules [3-3](#)scheduler problems [3-12](#)software forced crashes [4-6](#)spurious interrupts [3-18](#)spurious memory accesses [3-19](#)system crashes [3-8](#)system problems [3-8](#)TCC+ [4-8](#)test equipment [B-1](#)TTY lines [3-11](#)

## TX LED

OC-48 DPT/POS [4-16](#)**U**unsupported commands [A-1](#)**V**verifying the hardware [1-2](#)virtual exec processes [3-11](#)VTY sessions [3-11](#)**W**

## WRAP LED

OC-48 DPT/POS [4-17](#)

