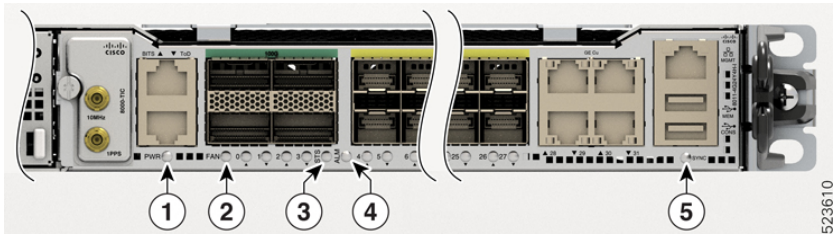
# Appendix

Certain troubleshooting aids of the Cisco 8011-4G24Y4H-I Router enable you to perform these tasks that assist the troubleshooting process:

***Figure 1: Cisco 8011-4G24Y4H-I Router LEDs***




| | | | |
|---|---|---|---|
| 1 | Router Power Status LED | 2 | Fan Assembly LEDs |
| 3 | System Status LED | 4 | Alarm Status LED |
| 5 | Synchronization LED | | |



# LEDs

The Cisco 8011 Router LEDs are similar for most of the variants, and any differences between the routers are specifically called out.

## Router LEDs

All the data port LEDs in the Cisco router are at the front panel.

*Table 1: Router LED Descriptions*

| LED Label | Color | Status |
|---|---|---|
| STS | Off | The module is powered-off (set by hardware); only standby power mode is available. |
| | Flashing Amber (Slow) | The module is booting up (set by IOFPGA). |
| | Flashing Amber (Fast) | The module is booting up (set by BIOS), shutting down, or is being reloaded. |
| | Amber | Host kernel is booted and is ready to start SysAdmin VM. |
| | Green | The module is operational and has no active major or critical alarms. |
| | Flashing Red | The router has active major or critical alarms. |
| ALM | Off | No alarm |
| | Red | Critical alarm - system scope, critical temperature. |
| | Flashing Red | Critical alarm - Relating to voltage rail failures. |
| | Amber | Major alarm - system-scope. |
| | Flashing Amber | Minor alarm - system-scope |
| SYNC | Off | Time core clock synchronization is disabled or in free-running state. |
| | Green | Time core is synchronized to an external source including IEEE1588. |
| | Flashing Green | System is in Synchronous Ethernet mode. |
| | Amber | Acquiring state or Holdover: Time core is in acquiring state or holdover mode. |

# Fan Assembly LEDs

Cisco 8011-4G24Y4H-I router has 5 fixed fans at the back panel. Fan modules are numbered from left to right as Fan 4 to Fan 0. There is an LED on the front panel of the router that reflect the different status of the fans.

*Table 2: Fan Assembly LEDs*

| LED Label | Color | Status |
|---|---|---|
| FAN | Off | Fan tray is not receiving power. |
| | Green | Fans are operating normally. |
| | Amber | Single fan failure. |
| | Red | More than one fan failure. |

# Power Status LEDs

*Table 3: Power Status LEDs*

| LED Label | Color | Status |
|---|---|---|
| PWR | Off | Sytem is powered off. |
| | Green | All the power supplies are on and operating normally. |
| | Amber | Standby FPGA upgrade is in progress (this is expected to take about three to five minutes). |
| | Red | Power redundancy is lost due to a power feed failure or an internal power supply failure. |

# Combination of LEDs

*Table 4: Fan and Power Status LED Combination*

| FAN | PWR | Status |
|---|---|---|
| For all the conditions below, the system will not boot. | | |
| Off | Red | Chassis Power Indication Failure |
| Green | Flashing Amber | All Fans are Switched Off or Not Running |
| Amber | Green | Default Condition |

| FAN | PWR | Status |
|---|---|---|
| Flashing Green | Flashing Green | BIOS Validation Failure |
| Flashing Red | Flashing Red | Thermal shutdown at Power Up |
| Flashing Red | Flashing Amber | MSS Ready Failure |
| Flashing Amber | Flashing Green | TAM Init Failure |
| Flashing Amber | Flashing Red | TAM Ready Failure |
| Flashing Amber (Slow) | Flashing Amber (Slow) | Secure JTAG Failure (CPU) |
| Flashing Amber (Fast) | Flashing Amber (Fast) | Secure JTAG Failure (NPU) |

# SFP and SFP+ Port LEDs

*Table 5: SFP and SFP+ Port LEDs*

| LED Label | Color | Status |
|---|---|---|
| STATUS | Off | Admin is down |
| | Green | Link is up in 1/10/25G ports |
| | Yellow | Fault or Error or Link Down |

# Copper Port LEDs

*Table 6: 1G Copper Port LEDs*

| LED Label | Color | Status |
|---|---|---|
| Left LED | Green | Link is up in 1G/100/10Mbps |
| | Blinking Green | Activity in 1G/100/10Mbps |
| | Amber or Orange | Fault/Error/Link is down |
| | Off | Admin is down |
| Right LED | Green | Link is up in full duplex |
| | Off | Link is up in half duplex |

# Management Port LEDs

*Table 7: Management Port LEDs*

| LED Label | Color | Status |
|---|---|---|
| Left LED | Green | Link is up in 1000 Mbps |
| | Blinking Green | Activity in 1000 Mbps |
| | Amber or Orange | Link is up in 100/10Mbps |
| | Blinking Amber or Orange | Activity in 100/10Mbps |
| | Off | Link is down |
| Right LED | Off | Unused |

# System Specifications

For more information on the weight, power consumption, environmental specifications, and other details, see *Cisco 8010 Series Router Data Sheet*.

# RJ45 Connectors

The RJ45 connector connects Category 3, Category 5, Category 5e, Category 6, or Category 6A foil twisted-pair or unshielded twisted-pair cable from the external network to the following module interface connectors:

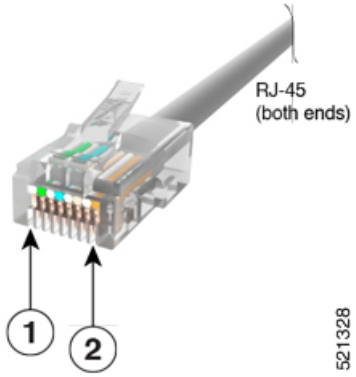
- Router chassis
  - CONSOLE port
  - MGMT ETH port

⚠

**Caution** To comply with GR-1089 intrabuilding, lightning immunity requirements, you must use a foil twisted-pair (FTP) cable that is properly grounded at both ends.

The following figure shows the RJ45 connector.

*Figure 2: RJ45 Connector*




| | |
|---|---|
| 1 | Transmit data (bidirectional) |
| 2 | NC (Not Connected) |

# Transceiver and Cable Specifications

To determine which transceivers and cables are supported by this router, see Cisco Transceiver Modules Compatibility Information.

To see the transceiver specifications and installation information, see Cisco Transceiver Modules Install and Upgrade Guides.

# RJ45 ToD or 1PPS Port Pinouts

The following table summarizes the RJ45 ToD or 1PPS port pinouts:

*Table 8: RJ45 ToD or 1PPS Port Pinouts*

| Pin | Signal Name | Direction | Description |
|---|---|---|---|
| 1 | NA | NA | NA |
| 2 | NA | NA | NA |
| 3 | 1PPS_N | Output or Input | 1PPS RS422 signal |
| 4 | GND | NA | NA |
| 5 | GND | NA | NA |
| 6 | 1PPS_P | Output or Input | 1PPS RS422 signal |
| 7 | TOD_N | Output or Input | Time-of-Day character |
| 8 | TOD_P | Output or Input | Time-of-Day character |

# Console Port Pinouts

This summarizes the Console port pinouts:

***Table 9: Console Port Pinouts***

| Pin | Signal Name | Direction | Description |
|---|---|---|---|
| 1 | ACONS-TX | Output | Aux Consoles transmit output, RS232 |
| 2 | NC | NA | NA |
| 3 | CONS-TX | Output | Console RS232 transmit |
| 4 | GND | NA | Ground |
| 5 | GND | NA | Ground |
| 6 | CONS-RX | Input | Console RS232 receive |
| 7 | ACONS-RX | Input | Aux Consoles receive input, RS232 |
| 8 | NC | NA | NA |

# Alarm Port Pinouts

This summarizes the alarm port pinouts:

***Table 10: Alarm Port Pinouts***

| Pin | Signal Name | Description |
|---|---|---|
| 1 | ALARM1_IN | Alarm input 1 |
| 2 | ALARM2_IN | Alarm input 2 |
| 3 | NC | NA |
| 4 | ALARM3_IN | Alarm input 3 |
| 5 | ALARM4_IN | Alarm input 4 |
| 6 | NC | NA |
| 7 | NC | NA |
| 8 | ALARM_I_COMMON | Alarm input COM |

To set the description of the alarm:

```
RP/0/RP0/CPU0:ios(config)# environment alarm-contact contact-number description
description
```

To set the severity of the alarm:

```
RP/0/RP0/CPU0:ios(config)# environment alarm-contact contact-number severity
[critical | major | minor] [
```

To set the trigger for the alarm:

```
RP/0/RP0/CPU0:ios(config)# environment alarm-contact contact-number trigger [open
 | closed]
```

**Note** You can configure up to four external alarms.

The *contact-number* is the pin number of the connected alarm port, that is Alarm input 1 to Alarm input 4.

The **description** string can be up to 80 alphanumeric characters in length and is included in any generated system messages.

For **severity**, enter any one of: **critical**, **major**, or **minor**.

Description and severity are both mandatory values.

Use the **show alarms** command in admin mode to view the alarm details. Use the **show logging** command to view the displays the state of syslog error and event logging.

An SNMP trap is sent for every external alarm that is raised or cleared on the system.

# USB Port Console Pinouts

This table summarizes the USB port console pinouts:

***Table 11: USB Port Console Pinouts***

| Pin | Signal Name | Description |
|---|---|---|
| A1 | VCC | +5 VDC |
| A2 | D– | Data– |
| A3 | D+ | Data+ |
| A4 | GND | Ground |

# USB Port Memory Pinouts

This table summarizes the USB port memory pinouts:

***Table 12: USB Port Memory Pinouts***

| Pin | Signal Name | Description |
|---|---|---|
| A1 | VCC | +5 VDC |
| A2 | D– | Data– |

| Pin | Signal Name | Description |
|---|---|---|
| A3 | D+ | Data+ |
| A4 | GND | Ground |

# Management Ethernet Port Pinouts

This table summarizes the management ethernet port pinouts:

***Table 13: Management Ethernet Port Pinouts***

| Pin | Signal Name |
|---|---|
| 1 | TRP0+ |
| 2 | TRP0– |
| 3 | TRP1+ |
| 4 | TRP2+ |
| 5 | TRP2– |
| 6 | TRP1– |
| 7 | TRP3+ |
| 8 | TRP3– |