

Troubleshooting Aids

Certain troubleshooting aids of the Cisco ASR 920 Router enable you to perform these tasks that assist the troubleshooting process:

- Verify Pinout, on page 1
- Check Optical Fiber Specifications, on page 5
- Check Alarm Conditions, on page 5
- Check LED Indicators, on page 5

Verify Pinout

Pinouts provide input signal (to the device) and output signal (from the device) information. Bits (BITS) port, GPS Port (1PPS and 10MHz), USB Console (CONSOLE) port, Time-of-Day (TOD) port, Alarm (ALARM) port, USB (USB CON and USB MEM) port, and Management Ethernet (MGMT) port pinout information is provided in the following sections.

BITS Port Pinouts

The following table summarizes the BITS port pinouts.

Table 1: BITS Port Pinouts

Pin	Signal Name	Direction	Description
1	RX Ring	Input	Receive Ring
2	RX Tip	Input	Receive Tip
3	—	—	Not used
4	TX Ring	Output	TX Ring
5	TX Tip	Output	TX Tip
6	—	—	Not used

Pin	Signal Name	Direction	Description
7	—	—	Not used
8	—	—	Not used

GPS Port Pinouts

The following table summarizes the GPS port pinouts.

Note The 10 Mhz and 1 PPS interfaces can be configured as input or output using Cisco IOS CLI commands. For more information, see the *Cisco ASR 920 Series Aggregation Services Router Configuration Guide*.

Table 2: GPS Port Pinout

	10 Mhz (input and output)	1PPS (input and output)
Waveform	Input—Sine wave Output—Sine or square wave	Input—Pulse shape Output—Pulse shape
Amplitude	Input— > 1.7 volt p-p (+8 to +10 dBm) Output— > 2.4 volts TTL compatible	Input— > 2.4 volts TTL compatible Output— > 2.4 volts TTL compatible
Impedance	50 ohms	50 ohms
Pulse Width	50% duty cycle	26 microseconds
Rise Time	Input—AC coupled Output—5 nanoseconds	40 nanoseconds

Time-of-Day Port Pinouts

The following table summarizes the ToD/1-PPS port pinouts.

Table 3: RJ-45 1PPS/ToD Port Pinouts

Pin	Signal Name	Direction	Description
1	RESERVED	Output	Do Not Connect
2	RESERVED	Input	Do Not Connect
3	1PPS_N	Output or Input	1PPS RS422 signal

Pin	Signal Name	Direction	Description
4	GND	—	—
5	GND	—	—
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

Alarm Port Pinouts

The following table summarizes the external alarm input pinouts.

Table 4: External Alarm Input Pinouts

Pin	Signal Name	Description
1	ALARM0_IN	Alarm input 0
2	ALARM1_IN	Alarm input 1
3	—	No connect
4	ALARM2_IN	Alarm input 2
5	ALARM3_IN	Alarm input 3
6	—	No connect
7	—	No connect
8	COMMON	Alarm common

Management Ethernet Port Pinouts

The following table summarizes the Management Ethernet port pinouts.

Table 5: Fan Alarm Port Pinout

Pin	Signal Name
1	TRP0+

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

USB Console Port Pinouts

The following table summarizes the USB console port pinouts.

Table 6: Single USB Console Port Pinouts

Pin	Signal Name	Description
A1	Vcc	+5VDC
A2	D-	Data -
A3	D+	Data +
A4	Gnd	Ground



Note The USB console port +5VDC is input, and operates as an USB peripheral device.

USB MEM Port Pinouts

The following table summarizes the USB MEM port pinouts.

Table 7: Single USB MEM Port Pinouts

Pin	Signal Name	Description
A1	Vcc	+5VDC (500mA)
A2	D-	Data -

Pin	Signal Name	Description
A3	D+	Data +
A4	Gnd	Ground

Note USB TYPE-A receptacle is used.

Note The USB MEM port +5VDC is output. Cisco ASR 920 Router provides power for USB MEM port. This port operates as a USB host device.

Check Optical Fiber Specifications

The specification for optical fiber transmission defines two types of fiber: single mode and multimode. Within the single-mode category, three transmission types are defined: short reach, intermediate reach, and long reach. Within the multimode category, only short reach is available. For information about optical SFP modules, see the documentation for the SFP module at:

http://www.cisco.com/en/US/partner/products/hw/modules/ps5455/prod_installation_guides_list.html .

Check Alarm Conditions

The following table summarizes the meaning of the alarm conditions on the Cisco ASR 920 Router.

Table 8: Alarm Condition Summary

Alarm Type	Alarm Meaning
Critical	Port in down state. Environmental sensor threshold exceeded critical level (voltage, temperature)
Major	Environmental sensor threshold exceeded major level (voltage, temperature)
Info	Port administratively shut down.

Check LED Indicators

For more information about the LEDs and their description, see the *LED Indicators* section in the *Overview* chapter.