

Troubleshooting

The following sections provide information for troubleshooting problems on the Cisco ASR 907 Router.

- Pinouts, on page 1
- LED Summary, on page 25

Pinouts

The following sections describe the pinouts for the Cisco ASR 907 Router interfaces:

BITS Port Pinout

The table below summarizes the BITS port pinout of the Front Panel “Building Integrated Timing Supply” RJ48 port.

Table 1: BITS Port Pinout

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
7			Not used
8			Not used

GPS Port Pinout

The platform is capable of receiving or sourcing GPS signals of 1 PPS & 10 MHz. These interfaces are provided by two mini-coax 50-Ohm, 1.0/2.3 DIN series connector on the front panel. Similarly there are two mini-coax 50-Ohm connectors provided in the front panel to output this 1PPS and 10MHz.

The table below summarizes the GPS port pinouts.

Table 2: GPS Port Pinout

	10 Mhz (input and output)	**1PPS (input and output)**
Waveform	Input—Sine wave Output—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 Pinout

The table below summarizes the ToD pinouts.

Table 3: ToD pinouts

Pin	**Signal Name**	**Direction**	**Description**
1	RESERVED	Output or Inputs	Do Not Connect
2	RESERVED	Output or Inputs	
3	1PPS_N	Input	1PPS RS422 signal
4	GND	—	—
5		—	—
6	1PPS_P	Input	1PPS RS422 signal
7	TOD_N	Output or input	Time of Day R422 output or input signal
8	TOD_P	Output or input	Time of Day R422 output or input signal

Use a 4-port EIA-232 DCE, 10 feet, Female DB-25, and CAB-HD4-232FC. Pinout of the DB25 connector to be connected to the RS232-to-RS422 converter.

Table 4: RS422 Pinout

Pin	Signal Name	Description
4	TXD+	RTS pin for RS232
20	TXD-	DTR pin for RS232
5	RXD+	CTS pin for RS232
6	RXD-	DSR pin for RS232

Alarm Port Pinout

The table below summarizes the external alarm input pinout.

Table 5: External Alarm Input Pinout

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

Console/Aux RJ45 RS232 Serial Port Pinout

The table below summarizes the console/aux RJ45 RS232 serial port pinout.

Table 6: Console/Aux RJ45 RS232 serial port

Pin	Signal Name	Direction	Description
1	RTS	Not Used	—

Pin	Signal Name	Direction	Description
2	DTR	Not Used	—
3	TXD	Output	Transmit data
4	RI	Not Used	—
5	GND		
6	RXD	Input	Receive data
7	DSR/DCD	Not Used	—
8	CTS	Not Used	—

T1/E1 Port Pinout

16 T1/E1 Interface Module Pinout

The table below summarizes the pinouts of the cable (Tyco part number 2163442-1, Cisco part number 72-5184-01) used to connect the T1/E1 interface module to the rear of the patch panel.

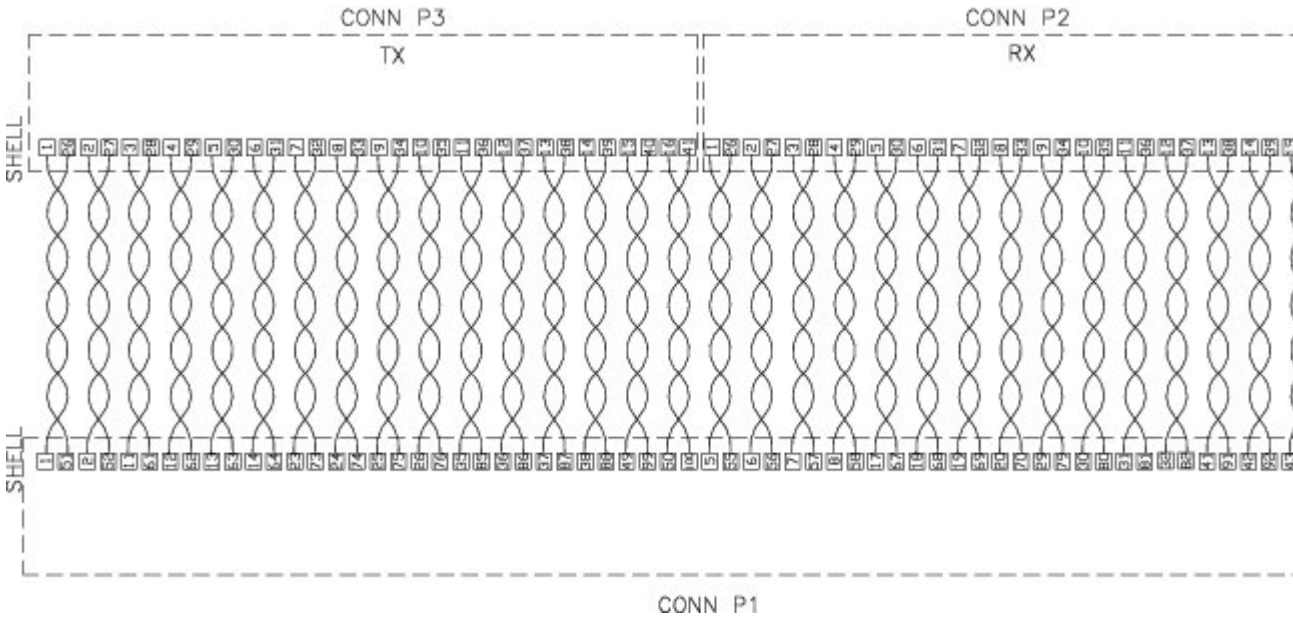
Table 7: 16 T1/E1 Interface Pinouts

Line	Board Pins	Signal Name	Telco TX	Jack Pin	Board Pins	Signal Name	Telco RX	Jack Pin
Line 0	88	TX_RING_P1	39	1	92	RX_RING_P1	39	4
	38	TX_TIP_P1	14	2	42	RX_TIP_P1	14	5
Line 1	87	TX_RING_P2	38	1	91	RX_RING_P2	38	4
	37	TX_TIP_P2	13	2	41	RX_TIP_P2	13	5
Line 2	76	TX_RING_P3	35	1	80	RX_RING_P3	35	4
	26	TX_TIP_P3	10	2	30	RX_TIP_P3	10	5
Line 3	75	TX_RING_P4	34	1	79	RX_RING_P4	34	4
	25	TX_TIP_P4	9	2	29	RX_TIP_P4	9	5
Line 4	100	TX_RING_P5	41	1	94	RX_RING_P5	41	4
	50	TX_TIP_P5	16	2	44	RX_TIP_P5	16	5

Line	Board PIns	Signal Name	Telco TX	Jack Pin	Board Pins	Signal Name	Telco RX	Jack Pin
Line 5	99	TX_RING_P6	40	1	93	RX_RING_P6	40	4
	49	TX_TIP_P6	15	2	43	RX_TIP_P6	15	5
Line 6	86	TX_RING_P7	37	1	82	RX_RING_P7	37	4
	36	TX_TIP_P7	12	2	32	RX_TIP_P7	12	5
Line 7	85	TX_RING_P8	36	1	81	RX_RING_P8	36	4
	35	TX_TIP_P8	11	2	31	RX_TIP_P8	11	5
Line 8	64	TX_RING_P9	31	1	68	RX_RING_P9	31	4
	14	TX_TIP_P9	6	2	18	RX_TIP_P9	6	5
Line 9	63	TX_RING_P10	30	1	67	RX_RING_P10	30	4
	13	TX_TIP_P10	5	2	17	RX_TIP_P10	5	5
Line 10	52	TX_RING_P11	27	1	56	RX_RING_P11	27	4
	2	TX_TIP_P11	2	2	6	RX_TIP_P11	2	5
Line 11	51	TX_RING_P12	26	1	55	RX_RING_P12	26	4
	1	TX_TIP_P12	1	2	5	RX_TIP_P12	1	5
Line 12	74	TX_RING_P13	33	1	70	RX_RING_P13	33	4
	24	TX_TIP_P13	8	2	20	RX_TIP_P13	8	5
Line 13	73	TX_RING_P14	32	1	69	RX_RING_P14	32	4
	23	TX_TIP_P14	7	2	19	RX_TIP_P14	7	5
Line 14	62	TX_RING_P15	29	1	58	RX_RING_P15	29	4
	12	TX_TIP_P15	4	2	8	RX_TIP_P15	4	5
Line 15	61	TX_RING_P16	28	1	57	RX_RING_P16	28	4
	11	TX_TIP_P16	3	2	7	RX_TIP_P16	3	5

The figure below shows the wiring schematic of the cable used to connect the T1/E1 interface module to the rear of the patch panel.

Figure 1: Wiring Schematic of Cable between 16 T1/E1 Interface and Patch Panel



32 T1/E1 Interface Module Pinout

The table below summarizes the pinouts of the cable used to connect the 32 T1/E1 interface module to the rear of the patch panel.

Table 8: 32 T1/E1 Pinout

Board Connector	Line	Board PIns	Signal Name	Telco TX	Jack Pin	Board Pins	Signal Name	Telco RX	Jack Pin
PORTS 0-15	Line 0	48	TX_RING_P0	39	1	66	RX_RING_P0	39	4
		14	TX_TIP_P0	14	2	32	RX_TIP_P0	14	5
	Line 1	47	TX_RING_P1	38	1	65	RX_RING_P1	38	4
13		TX_TIP_P1	13	2	31	RX_TIP_P1	13	5	
Line 2	44	TX_RING_P2	35	1	62	RX_RING_P2	35	4	
	10	TX_TIP_P2	10	2	28	RX_TIP_P2	10	5	
Line 3	43	TX_RING_P3	34	1	61	RX_RING_P3	34	4	
	9	TX_TIP_P3	9	2	27	RX_TIP_P3	9	5	
Line 4	50	TX_RING_P4	41	1	68	RX_RING_P4	41	4	
	16	TX_TIP_P4	16	2	34	RX_TIP_P4	16	5	

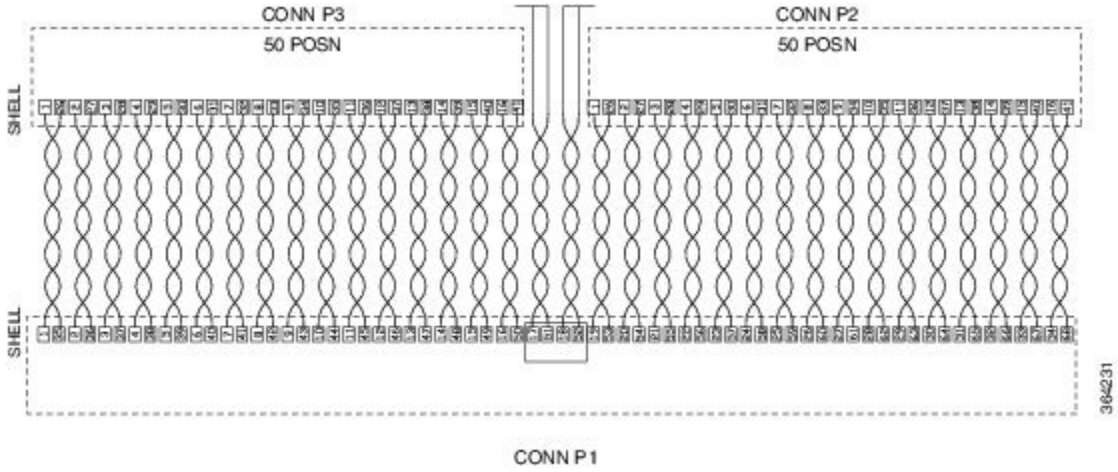
Board Connector	Line	Board PIns	Signal Name	Telco TX	Jack Pin	Board Pins	Signal Name	Telco RX	Jack Pin
Line 5	49	TX_RING_P5	40	1	67	RX_RING_P5	40	4	
	15	TX_TIP_P5	15	2	33	RX_TIP_P5	15	5	
Line 6	46	TX_RING_P6	37	1	64	RX_RING_P6	37	4	
	12	TX_TIP_P6	12	2	30	RX_TIP_P6	12	5	
Line 7	45	TX_RING_P7	36	1	63	RX_RING_P7	36	4	
	11	TX_TIP_P7	11	2	29	RX_TIP_P7	11	5	
Line 8	40	TX_RING_P8	31	1	58	RX_RING_P8	31	4	
	6	TX_TIP_P8	6	2	24	RX_TIP_P8	6	5	
Line 9	39	TX_RING_P9	30	1	57	RX_RING_P9	30	4	
	5	TX_TIP_P9	5	2	23	RX_TIP_P9	5	5	
Line 10	36	TX_RING_P10	27	1	54	RX_RING_P10	27	4	
	2	TX_TIP_P10	2	2	20	RX_TIP_P10	2	5	
Line 11	35	TX_RING_P11	26	1	53	RX_RING_P11	26	4	
	1	TX_TIP_P11	1	2	19	RX_TIP_P11	1	5	
Line 12	42	TX_RING_P12	33	1	60	RX_RING_P12	33	4	
	8	TX_TIP_P12	8	2	26	RX_TIP_P12	8	5	
Line 13	41	TX_RING_P13	32	1	59	RX_RING_P13	32	4	
	7	TX_TIP_P13	7	2	25	RX_TIP_P13	7	5	
Line 14	38	TX_RING_P14	29	1	56	RX_RING_P14	29	4	
	4	TX_TIP_P14	4	2	22	RX_TIP_P14	4	5	
Line 15	37	TX_RING_P15	28	1	55	RX_RING_P15	28	4	
	3	TX_TIP_P15	3	2	21	RX_TIP_P15	3	5	
PORTS 16-31	Line 16	48	TX_RING_P16	39	1	66	RX_RING_P16	39	4
		14	TX_TIP_P16	14	2	32	RX_TIP_P16	14	5
	Line 17	47	TX_RING_P17	38	1	65	RX_RING_P17	38	4
13		TX_TIP_P17	13	2	31	RX_TIP_P17	13	5	

Board Connector	Line	Board PIns	Signal Name	Telco TX	Jack Pin	Board Pins	Signal Name	Telco RX	Jack Pin
Line 18	44	TX_RING_P18	35	1	62	RX_RING_P18	35	4	
	10	TX_TIP_P18	10	2	28	RX_TIP_P18	10	5	
Line 19	43	TX_RING_P19	34	1	61	RX_RING_P19	34	4	
	9	TX_TIP_P19	9	2	27	RX_TIP_P19	9	5	
Line 20	50	TX_RING_P20	41	1	68	RX_RING_P20	41	4	
	16	TX_TIP_P20	16	2	34	RX_TIP_P20	16	5	
Line 21	49	TX_RING_P21	40	1	67	RX_RING_P21	40	4	
	15	TX_TIP_P21	15	2	33	RX_TIP_P21	15	5	
Line 22	46	TX_RING_P22	37	1	64	RX_RING_P22	37	4	
	12	TX_TIP_P22	12	2	30	RX_TIP_P22	12	5	
Line 23	45	TX_RING_P23	36	1	63	RX_RING_P23	36	4	
	11	TX_TIP_P23	11	2	29	RX_TIP_P23	11	5	
Line 24	40	TX_RING_P24	31	1	58	RX_RING_P24	31	4	
	6	TX_TIP_P24	6	2	24	RX_TIP_P24	6	5	
Line 25	39	TX_RING_P25	30	1	57	RX_RING_P25	30	4	
	5	TX_TIP_P25	5	2	23	RX_TIP_P25	5	5	
Line 26	36	TX_RING_P26	27	1	54	RX_RING_P26	27	4	
	2	TX_TIP_P26	2	2	20	RX_TIP_P26	2	5	
Line 27	35	TX_RING_P27	26	1	53	RX_RING_P27	26	4	
	1	TX_TIP_P27	1	2	19	RX_TIP_P27	1	5	
Line 28	42	TX_RING_P28	33	1	60	RX_RING_P28	33	4	
	8	TX_TIP_P28	8	2	26	RX_TIP_P28	8	5	
Line 29	41	TX_RING_P29	32	1	59	RX_RING_P29	32	4	
	7	TX_TIP_P29	7	2	25	RX_TIP_P29	7	5	
Line 30	38	TX_RING_P30	29	1	56	RX_RING_P30	29	4	
	4	TX_TIP_P30	4	2	22	RX_TIP_P30	4	5	

Board Connector	Line	Board PIns	Signal Name	Telco TX	Jack Pin	Board Pins	Signal Name	Telco RX	Jack Pin
Line 31	37	TX_RING_P31	28	1	55	RX_RING_P31	28	4	
	3	TX_TIP_P31	3	2	21	RX_TIP_P31	3	5	

The figure below shows the wiring schematic of the cable used to connect the 32 T1/E1 interface module to the rear of the patch panel.

Figure 2: 32 T1/E1 Wiring Schematic of Cable between 32 T1/E1 Interface and Patch Panel



8 T1/E1 Interface Module —RJ48C Port Pinouts

Table 9: RJ48C Connector Pin-out for 8 T/E1 Interface Module

Pin	Signal	Direction	Description
1	RX_TIP	Input	Receive Tip
2	RX_RING	Output	Receive Ring
3			Not Connected
4	TX_TIP	Input	Receive Tip
5	TX_RING	Output	Receive Ring
6			Not Connected
7			Not Connected
8			Not Connected

AMP64 Pinouts

Table 10: Port 0-23 RX

Pin Number	Signal Name	Pin	Signal
1	RX Ring Port 0	33	RX Tip Port 0
2	RX Ring Port 1	34	RX Tip Port 1
3	RX Ring Port 2	35	RX Tip Port 2
4	RX Ring Port 3	36	RX Tip Port 3
5	RX Ring Port 4	37	RX Tip Port 4
6	RX Ring Port 5	38	RX Tip Port 5
7	RX Ring Port 6	39	RX Tip Port 6
8	RX Ring Port 7	40	RX Tip Port 7
9	RX Ring Port 8	41	RX Tip Port 8
10	RX Ring Port 9	42	RX Tip Port 9
11	RX Ring Port 10	43	RX Tip Port 10
12	RX Ring Port 11	44	RX Tip Port 11
13	RX Ring Port 12	45	RX Tip Port 12
14	RX Ring Port 13	46	RX Tip Port 13
15	RX Ring Port 14	47	RX Tip Port 14
16	RX Ring Port 15	48	RX Tip Port 15
17	RX Ring Port 16	49	RX Tip Port 16
18	RX Ring Port 17	50	RX Tip Port 17
19	RX Ring Port 18	51	RX Tip Port 18
20	RX Ring Port 19	52	RX Tip Port 19
21	RX Ring Port 20	53	RX Tip Port 20
22	RX Ring Port 21	54	RX Tip Port 21
23	RX Ring Port 22	55	RX Tip Port 22
24	RX Ring Port 23	56	RX Tip Port 23
25	Open	57	Open

Pin Number	Signal Name	Pin	Signal
26	Open	58	Open
27	Open	59	Open
28	Open	60	Open
29	Open	61	Open
30	Open	62	Open
31	Open	63	Open
32	Open	64	Open

Table 11: Port 24-47 RX

Pin Number	Signal Name	Pin	Signal
1	RX Ring Port 24	33	RX Tip Port 24
2	RX Ring Port 25	34	RX Tip Port 25
3	RX Ring Port 26	35	RX Tip Port 26
4	RX Ring Port 27	36	RX Tip Port 27
5	RX Ring Port 28	37	RX Tip Port 28
6	RX Ring Port 29	38	RX Tip Port 29
7	RX Ring Port 30	39	RX Tip Port 30
8	RX Ring Port 31	40	RX Tip Port 31
9	RX Ring Port 32	41	RX Tip Port 32
10	RX Ring Port 33	42	RX Tip Port 33
11	RX Ring Port 34	43	RX Tip Port 34
12	RX Ring Port 35	44	RX Tip Port 35
13	RX Ring Port 36	45	RX Tip Port 36
14	RX Ring Port 37	46	RX Tip Port 37
15	RX Ring Port 38	47	RX Tip Port 38
16	RX Ring Port 39	48	RX Tip Port 39
17	RX Ring Port 40	49	RX Tip Port 40
18	RX Ring Port 41	50	RX Tip Port 41

Pin Number	Signal Name	Pin	Signal
19	RX Ring Port 42	51	RX Tip Port 42
20	RX Ring Port 43	52	RX Tip Port 43
21	RX Ring Port 44	53	RX Tip Port 44
22	RX Ring Port 45	54	RX Tip Port 45
23	RX Ring Port 46	55	RX Tip Port 46
24	RX Ring Port 47	56	RX Tip Port 47
25	Open	57	Open
26	Open	58	Open
27	Open	59	Open
28	Open	60	Open
29	Open	61	Open
30	Open	62	Open
31	Open	63	Open
32	Open	64	Open

Table 12: Port 0-23 TX

Pin Number	Signal Name	Pin	Signal
1	TX Ring Port 0	33	TX Tip Port 0
2	TX Ring Port 1	34	TX Tip Port 1
3	TX Ring Port 2	35	TX Tip Port 2
4	TX Ring Port 3	36	TX Tip Port 3
5	TX Ring Port 4	37	TX Tip Port 4
6	TX Ring Port 5	38	TX Tip Port 5
7	TX Ring Port 6	39	TX Tip Port 6
8	TX Ring Port 7	40	TX Tip Port 7
9	TX Ring Port 8	41	TX Tip Port 8
10	TX Ring Port 9	42	TX Tip Port 9
11	TX Ring Port 10	43	TX Tip Port 10

Pin Number	Signal Name	Pin	Signal
12	TX Ring Port 11	44	TX Tip Port 11
13	TX Ring Port 12	45	TX Tip Port 12
14	TX Ring Port 13	46	TX Tip Port 13
15	TX Ring Port 14	47	TX Tip Port 14
16	TX Ring Port 15	48	TX Tip Port 15
17	TX Ring Port 16	49	TX Tip Port 16
18	TX Ring Port 17	50	TX Tip Port 17
19	TX Ring Port 18	51	TX Tip Port 18
20	TX Ring Port 19	52	TX Tip Port 19
21	TX Ring Port 20	53	TX Tip Port 20
22	TX Ring Port 21	54	TX Tip Port 21
23	TX Ring Port 22	55	TX Tip Port 22
24	TX Ring Port 23	56	TX Tip Port 23
25	Open	57	Open
26	Open	58	Open
27	Open	59	Open
28	Open	60	Open
29	Open	61	Open
30	Open	62	Open
31	Open	63	Open
32	Open	64	Open

Table 13: Port 24-47 TX

Pin Number	Signal Name	Pin	Signal
1	TX Ring Port 24	33	TX Tip Port 24
2	TX Ring Port 25	34	TX Tip Port 25
3	TX Ring Port 26	35	TX Tip Port 26
4	TX Ring Port 27	36	TX Tip Port 27

Pin Number	Signal Name	Pin	Signal
5	TX Ring Port 28	37	TX Tip Port 28
6	TX Ring Port 29	38	TX Tip Port 29
7	TX Ring Port 30	39	TX Tip Port 30
8	TX Ring Port 31	40	TX Tip Port 31
9	TX Ring Port 32	41	TX Tip Port 32
10	TX Ring Port 33	42	TX Tip Port 33
11	TX Ring Port 34	43	TX Tip Port 34
12	TX Ring Port 35	44	TX Tip Port 35
13	TX Ring Port 36	45	TX Tip Port 36
14	TX Ring Port 37	46	TX Tip Port 37
15	TX Ring Port 38	47	TX Tip Port 38
16	TX Ring Port 39	48	TX Tip Port 39
17	TX Ring Port 40	49	TX Tip Port 40
18	TX Ring Port 41	50	TX Tip Port 41
19	TX Ring Port 42	51	TX Tip Port 42
20	TX Ring Port 43	52	TX Tip Port 43
21	TX Ring Port 44	53	TX Tip Port 44
22	TX Ring Port 45	54	TX Tip Port 45
23	TX Ring Port 46	55	TX Tip Port 46
24	TX Ring Port 47	56	TX Tip Port 47
25	Open	57	Open
26	Open	58	Open
27	Open	59	Open
28	Open	60	Open
29	Open	61	Open
30	Open	62	Open
31	Open	63	Open
32	Open	64	Open

Patch Panel Pinout

The table below summarizes the patch panel pinouts of the connectors from the 48 port T1/E1 DIN, RJ48, AMP64, and 48 port T3/E3 DIN, HDBNC connectors that connects to the interface module (IM).

Table 14: Patch Panel Pinout

Pin	Signal Name Connector (0-15)	Signal Name Connector (16-31)	Signal Name Connector (32-47)
1	TX_PORT15_RING	TX_PORT31_RING	TX_PORT47_RING
2	TX_PORT15_TIP	TX_PORT31_TIP	TX_PORT47_TIP
3	TX_PORT14_RING	TX_PORT30_RING	TX_PORT46_RING
4	TX_PORT14_TIP	TX_PORT30_TIP	TX_PORT46_TIP
5	TX_PORT13_RING	TX_PORT29_RING	TX_PORT45_RING
6	TX_PORT13_TIP	TX_PORT29_TIP	TX_PORT45_TIP
7	TX_PORT12_RING	TX_PORT28_RING	TX_PORT44_RING
8	TX_PORT12_TIP	TX_PORT28_TIP	TX_PORT44_TIP
9	TX_PORT11_RING	TX_PORT27_RING	TX_PORT43_RING
10	TX_PORT11_TIP	TX_PORT27_TIP	TX_PORT43_TIP
11	TX_PORT10_RING	TX_PORT26_RING	TX_PORT42_RING
12	TX_PORT10_TIP	TX_PORT26_TIP	TX_PORT42_TIP
13	TX_PORT9_RING	TX_PORT25_RING	TX_PORT41_RING
14	TX_PORT9_TIP	TX_PORT25_TIP	TX_PORT41_TIP
15	TX_PORT8_RING	TX_PORT24_RING	TX_PORT40_RING
16	TX_PORT8_TIP	TX_PORT24_TIP	TX_PORT40_TIP
17	—	—	—
18	—	—	—
19	TX_PORT7_RING	TX_PORT23_RING	TX_PORT39_RING
20	TX_PORT7_TIP	TX_PORT23_TIP	TX_PORT39_TIP
21	TX_PORT6_RING	TX_PORT22_RING	TX_PORT38_RING
22	TX_PORT6_TIP	TX_PORT22_TIP	TX_PORT38_TIP
23	TX_PORT5_RING	TX_PORT21_RING	TX_PORT37_RING

Pin	Signal Name Connector (0-15)	Signal Name Connector (16-31)	Signal Name Connector (32-47)
24	TX_PORT5_TIP	TX_PORT21_TIP	TX_PORT37_TIP
25	TX_PORT4_RING	TX_PORT20_RING	TX_PORT36_RING
26	TX_PORT4_TIP	TX_PORT20_TIP	TX_PORT36_TIP
27	TX_PORT3_RING	TX_PORT19_RING	TX_PORT35_RING
28	TX_PORT3_TIP	TX_PORT19_TIP	TX_PORT35_TIP
29	TX_PORT2_RING	TX_PORT18_RING	TX_PORT34_RING
30	TX_PORT2_TIP	TX_PORT18_TIP	TX_PORT34_TIP
31	TX_PORT1_RING	TX_PORT17_RING	TX_PORT33_RING
32	TX_PORT1_TIP	TX_PORT17_TIP	TX_PORT33_TIP
33	TX_PORT0_RING	TX_PORT16_RING	TX_PORT32_RING
34	TX_PORT0_TIP	TX_PORT16_TIP	TX_PORT32_TIP
35	RX_PORT15_RING	RX_PORT31_RING	RX_PORT47_RING
36	RX_PORT15_TIP	RX_PORT31_TIP	RX_PORT47_TIP
37	RX_PORT14_RING	RX_PORT30_RING	RX_PORT46_RING
38	RX_PORT14_TIP	RX_PORT30_TIP	RX_PORT46_TIP
39	RX_PORT13_RING	RX_PORT29_RING	RX_PORT45_RING
40	RX_PORT13_TIP	RX_PORT29_TIP	RX_PORT45_TIP
41	RX_PORT12_RING	RX_PORT28_RING	RX_PORT44_RING
42	RX_PORT12_TIP	RX_PORT28_TIP	RX_PORT44_TIP
43	RX_PORT11_RING	RX_PORT27_RING	RX_PORT43_RING
44	RX_PORT11_TIP	RX_PORT27_TIP	RX_PORT43_TIP
45	RX_PORT10_RING	RX_PORT26_RING	RX_PORT42_RING
46	RX_PORT10_TIP	RX_PORT26_TIP	RX_PORT42_TIP
47	RX_PORT9_RING	RX_PORT25_RING	RX_PORT41_RING
48	RX_PORT9_TIP	RX_PORT25_TIP	RX_PORT41_TIP
49	RX_PORT41_TIP	RX_PORT24_RING	RX_PORT40_RING
50	RX_PORT8_TIP	RX_PORT24_TIP	RX_PORT40_TIP

Pin	Signal Name Connector (0-15)	Signal Name Connector (16-31)	Signal Name Connector (32-47)
51	—	—	—
52	—	—	—
53	RX_PORT7_RING	RX_PORT23_RING	RX_PORT39_RING
54	RX_PORT7_TIP	RX_PORT23_TIP	RX_PORT39_TIP
55	RX_PORT6_RING	RX_PORT22_RING	RX_PORT38_RING
56	RX_PORT6_TIP	RX_PORT22_TIP	RX_PORT38_TIP
57	RX_PORT5_RING	RX_PORT21_RING	RX_PORT37_RING
58	RX_PORT5_TIP	RX_PORT21_TIP	RX_PORT37_TIP
59	RX_PORT4_RING	RX_PORT20_RING	RX_PORT36_RING
60	RX_PORT4_TIP	RX_PORT20_TIP	RX_PORT36_TIP
61	RX_PORT3_RING	RX_PORT19_RING	RX_PORT35_RING
62	RX_PORT3_TIP	RX_PORT19_TIP	RX_PORT35_TIP
63	RX_PORT2_RING	RX_PORT18_RING	RX_PORT34_RING
64	RX_PORT2_TIP	RX_PORT18_TIP	RX_PORT34_TIP
65	RX_PORT1_RING	RX_PORT17_RING	RX_PORT33_RING
66	RX_PORT1_TIP	RX_PORT17_TIP	RX_PORT33_TIP
67	RX_PORT0_RING	RX_PORT16_RING	RX_PORT32_RING
68	RX_PORT0_TIP	RX_PORT16_TIP	RX_PORT32_TIP

The table below summarizes the 3G patch panel pinouts of the connectors that connects to the interface module (IM).

Table 15: 3G Patch Panel Pinout

Pin	Signal Name Connector (0-15)	Signal
1	TX_PORT15_RING	DS3
2	TX_PORT15_TIP	DS3
3	TX_PORT14_RING	DS3
4	TX_PORT14_TIP	DS3

Pin	Signal Name Connector (0-15)	Signal
5	TX_PORT13_RING	DS3
6	TX_PORT13_TIP	DS3
7	TX_PORT12_RING	DS3
8	TX_PORT12_TIP	DS3
9	TX_PORT11_RING	DS1
10	TX_PORT11_TIP	DS1
11	TX_PORT10_RING	DS1
12	TX_PORT10_TIP	DS1
13	TX_PORT9_RING	DS1
14	TX_PORT9_TIP	DS1
15	TX_PORT8_RING	DS1
16	TX_PORT8_TIP	DS1
17	—	—
18	—	—
19	TX_PORT7_RING	DS1
20	TX_PORT7_TIP	DS1
21	TX_PORT6_RING	DS1
22	TX_PORT6_TIP	DS1
23	TX_PORT5_RING	DS1
24	TX_PORT5_TIP	DS1
25	TX_PORT4_RING	DS1
26	TX_PORT4_TIP	DS1
27	TX_PORT3_RING	DS1
28	TX_PORT3_TIP	DS1
29	TX_PORT2_RING	DS1
30	TX_PORT2_TIP	DS1
31	TX_PORT1_RING	DS1

Pin	Signal Name Connector (0-15)	Signal
32	TX_PORT1_TIP	DS1
33	TX_PORT0_RING	DS1
34	TX_PORT0_TIP	DS1
35	RX_PORT15_RING	DS3
36	RX_PORT15_TIP	DS3
37	RX_PORT14_RING	DS3
38	RX_PORT14_TIP	DS3
39	RX_PORT13_RING	DS3
40	RX_PORT13_TIP	DS3
41	RX_PORT12_RING	DS3
42	RX_PORT12_TIP	DS3
43	RX_PORT11_RING	DS1
44	RX_PORT11_TIP	DS1
45	RX_PORT10_RING	DS1
46	RX_PORT10_TIP	DS1
47	RX_PORT9_RING	DS1
48	RX_PORT9_TIP	DS1
49	RX_PORT8_RING	DS1
50	RX_PORT8_TIP	DS1
51	—	—
52	—	—
53	RX_PORT7_RING	DS1
54	RX_PORT7_TIP	DS1
55	RX_PORT6_RING	DS1
56	RX_PORT6_TIP	DS1
57	RX_PORT5_RING	DS1
58	RX_PORT5_TIP	DS1

Pin	Signal Name Connector (0-15)	Signal
59	RX_PORT4_RING	DS1
60	RX_PORT4_TIP	DS1
61	RX_PORT3_RING	DS1
62	RX_PORT3_TIP	DS1
63	RX_PORT2_RING	DS1
64	RX_PORT2_TIP	DS1
65	RX_PORT1_RING	DS1
66	RX_PORT1_TIP	DS1
67	RX_PORT0_RING	DS1
68	RX_PORT0_TIP	DS1

Serial Cable Pinouts

The following sections summarize the pinouts on the serial interface module when used with the cable types specified in Connecting Serial Cables.

DB-9 Connector Pinouts

The table below summarizes the pinouts for each serial interface type when using a DB-9 connector.

Table 16: DB-9 Pin-outs

Pin	Standard DB-9	Direction	Description	RS-485	IRIG-B
1	NC	Output	Unused	NC	NC
2	RxD	Input	Receive	NC	NC
3	TxD	Output	Transmit	IRIG-B (RS232)	IRIG-B (RS232)
4	DTR	Output	DTR	TxD-	IRIG-B- (RS485)
5	GND		GND	GND	GND
6	DSR	Input	DSR	RxD	NC
7	RTS	Output	RTS	TxD+	IRIG-B+

Pin	Standard DB-9	Direction	Description	RS-485	IRIG-B
8	CTS	Input	CTS	RxD+ (	NC
9	NC/GND		Unused or Ring	NC	NC

Note Twisted pairs are 2-5, 6-8, 4-7.

Note The X.21, V.35, RS-485, EIA-449, EIA-530, and IRIG-B standards are not currently supported by software.

RJ-45 Connector Pinouts

The table below summarizes the pinouts for each serial interface type when using an RJ-45 connector.

Table 17: RJ45 Pinout

Pin	Standard DB-9	Direction	Description	RS-485	IRIG-B
1	RTS	Input	Ready to send	RxD+ (RS485)	NC
2	DTR	Input	DTR	RxD- (RS485)	NC
3	TxD	Input	Transmit	NC	NC
4	GND		Signal ground	Gnd	Gnd
5	GND		Signal ground	Gnd	Gnd
6	RxD	Output	Receive data	IRIG-B (RS232)	IRIG-B (RS232)
7	DST	Output	DSR	TxD-	IRIG-B- (RS485)
8	CTS	Output	CTS	TxD+	IRIG-B+ (RS485)

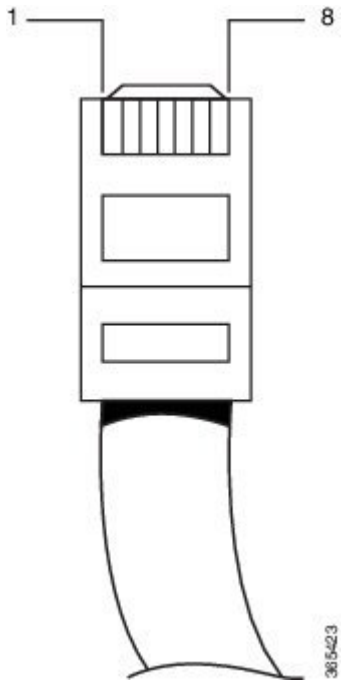
Note Twisted Pairs are: 1-2, 3-6, 4-5, 7-8.

Note The X.21, V.35, RS-485, EIA-449, EIA-530, and IRIG-B standards are not currently supported by software.

RJ-48 Connector Pinouts

The figure shows the RJ-48C connector wiring for the T1/E1 cable for the Cisco 2-port T1/E1-RAN interface card. The table shows the pinout configuration for the RJ-48C connectors on the Cisco 2-port T1/E1-RAN interface card for both the shielded and unshielded cables for either T1 or E1.

Figure 3: RJ-48C Connector Wiring



Note Cisco recommends using a shielded cable for your RJ-48C connectors.

Shielded		**Unshielded**	
Pin	Description	Pin	Description
1	Receive Ring	1	Receive Ring
2	Receive Tip	2	Receive Tip
3	Receive Shield	3	—
4	Transmit Ring	4	Transmit Ring
5	Transmit Tip	5	Transmit Tip

Shielded		Unshielded	
6	Transmit Shield	6	—
7	Not Used	7	—
8	Not Used	8	—

Management Ethernet Port Pinout

A single management copper ENET port supporting 10/100/1000Base-T operation exists on each RSP. There is no direct access to the CPU of the other RSP. It uses a standard RJ45 jack.

Note This is not a data plane port.

The table below summarizes the Management Ethernet port pinout.

Table 18: Management Ethernet Port Pinout

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

USB Console Port Pinout

Two individual Type-A USB connector are used for USB console and USB mass storage. One single USB 2.0 Type-A receptacle is provided on the RSP front panel for providing console access to ROMMON, IOS-XE and diagnostics. It operates as a USB peripheral only for connection to an external host PC. This requires the use of a Type-A to Type-A connector instead of a standard USB cable.

Note The use of the USB console is mutually exclusive with the RS232 console/Aux port. While a USB cable is inserted, access is automatically switched to this port.

The other single USB 2.0 Type-A receptacle is provided on the RSP front panel for inserting external USB mass storage devices such as standard USB flash drives. It is used to load images, store configurations, write logs, etc. It supports operation up to 12Mbps

The table below summarizes the USB console port pinout.

Pin	Signal Name	Direction	Description
A1	Vcc		+5VDC (500mA)
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 Flash/MEM Port Pinout

The table below summarizes the USB flash/MEM port pinout.

Table 19: Single USB Flash/MEM Port

Pin	Signal Name	Direction	Description
A1	Vcc		+5VDC (500mA)
A2	D-		Data -
A3	D+		Data +
A4	Gnd		Ground

Note USB TYPE-A receptacle used.

Note The USB flash/MEM port +5VDC is output. We provide power for USB flash/MEM, and it operates as a USB host device.

Fiber-Optic 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.

LED Summary

The following sections describe the meanings of the LEDs on the Cisco ASR 907 Router.

RSP LEDs

The table below summarizes the RSP LEDs.

Note A major alarm condition indicates the failure of a single fan in the fan tray; a critical alarm indicates the failure of multiple fans. In the event that a single fan fails, the Cisco ASR 907 Router software adjusts the fan speed to prevent excessive heat within the chassis.

ASR900-RSP LED

Table 20: RSP LEDs

LED	Color/State	Description (two LEDs for each port)
Power (PWR)	Off	Disabled/no power to RSP
	Green	Power rails on RSP in range
Status (STAT)	Off	Disabled/power down
	Red	Failure to boot (lit at reset)
	Yellow	Rommon booted
	Green	IOS booted and running
Active (ACT)	Off	Not available
	Yellow	Standby (indicates standby RSP)
	Green	Active (indicates active RSP)
Management port (MGMT)	Off	No connection
	Green	Connected with no activity
	Flashing green	Connected with activity

LED	Color/State	Description (two LEDs for each port)
Sync status (SYNC)	Off	Not enabled
	Yellow	Free run
	Flashing yellow	Holdover
	Green	Locked to source
USB flash (MEM)	Flashing green	USB activity
BITS	Off	Out of service/not configured
	Amber	Fault or loop condition
	Green	In frame/working properly

ASR900-RSP3C-400-W LED Fault Condition

The PWR and STAT LEDs are available on the front panel. These LEDs provide power on the board (PWR) and overall router health (STAT) status. During power up state, these LEDs provide booting status and report errors.

Note The digital code signing functionality validates the integrity and authenticity of the ROMMON image before booting it.

Table 21: ASR900-RSP3A-400-W LED

PWR LED State	STAT LED State	Indication	Comment
Light Green	Red	Power is OK and the field-programmable gate array (FPGA) is nfigured successfully, but FPGA image validation failed.	Image validation failed. System is in hung state.

PWR LED State	STAT LED State	Indication	Comment
Flashing Light Green and Green alternatively	Off	FPGA configured and core validated successfully. FPGA image passed the control to micro-loader to boot ROMMON.	System is up with ROMMON. Both the FPGA image is validated successfully, but the booted ROMMON (primary or secondary) is undetermined.
	Amber	The digital code signing functionality reported upgrade FPGA image validation error and is continuing with the FPGA image.	System is up with ROMMON. FPGA image is validated successfully, but the booted ROMMON (primary or secondary) is undetermined.
	Red	The digital code signing functionality reported failure in the ROMMON image validation.	FPGA is up but both primary and secondary ROMMON failed. System is in hung state.
Green	Off	IOS is successfully booted	IOS writes into FPGA register to indicate that it has booted, FPGA stops flashing PWR LED and turns Green. Software now controls the STAT LED.

Interface Module LEDs

The LED summary applies to the following interface modules:

- SFP Gigabit Ethernet Interface Module
- RJ45 Gigabit Ethernet Interface Module
- XFP 10 Gigabit Ethernet XFP Interface Module
- 8x1 Gigabit Ethernet SFP + 1x10 Gigabit Ethernet SFP+ Interface Module
- 8x1 Gigabit Ethernet RJ45 + 1x10 Gigabit Ethernet SFP+ Interface Module
- 2x10 Gigabit Ethernet SFP+ Interface Module
- 48 T1/E1 TDM Interface Module (48XT1/E1)
- 48 T3/E3 TDM Interface Module (48XT3/E3)
- 1-port OC-192 or 8-port Low Rate CEM Interface Module
- 8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module
- 8-port 10/25G SFP+/SFP28 multi-rate interface module

The Status LED is Amber for the 10 Gigabit Ethernet ports when operating in WAN mode for the following IMS:

- 8x1 Gigabit Ethernet SFP + 1x10 Gigabit Ethernet SFP+ Interface Module
- 8x1 Gigabit Ethernet RJ45 + 1x10 Gigabit Ethernet SFP+ Interface Module
- 2x10 Gigabit Ethernet SFP+ Interface Module

Table 22: Interface Module LEDs

LED	Color/State	Description
Power (PWR)	Off	Disabled/no power to IM
	Green	Enabled and power rails on IM in range
Status (STAT)	Off	Disabled/power-down
	Red	Failure (on at reset)
	Flashing Red	Booting (if local CPU)
	Green	Operational
Link status (L)	Off	Inactive or no connection
	Amber	Fault/loop condition
	Green	Ok with activity or no activity
Speed (S)	Off	Inactive port status
	Green	Activity or no activity

1-Port OC-192 or 8-Port Low Rate CEM Interface Module LEDs

The table summarizes the LEDs for the 1-Port OC-192 or 8-Port Low Rate CEM Interface Module.

LED	Color/State	Meaning (Default=Off)
Power (PWR)	Green	All power rails are within spec
	Red	Disabled
	Off	No power to IM
Operating Status (STAT)	Green	Operational
	Red	Failure
	Off	Disabled
SFP Link (Left LED)	Green	Link Up
	Yellow	Fault or Error or Alarm
	Off	Disabled
SFP Link (Right LED)	Yellow	SONET or SDH
	Flashing Yellow	RFU
	Off	Disabled

LED	Color/State	Meaning (Default=Off)
10G SFP+Link (Left LED)	Green	Link Up
	Yellow	Fault or Error or Alarm
	Off	Disabled
10G SFP+ Speed Mode (Right LED)	Yellow	SONET or SDH
	Off	Disabled

48 T1/E1 and 48 T3/E3 Interface Module LEDs

The table summarizes the LEDs for the 48 T1/E1 and 48 T3/E3 interface module.

LED	Color/State	Meaning (Default=Off)
Power (PWR)	Green	All power rails are within spec
	Red	Disabled
	Off	No power to Interface Module
Operating Status (STAT)	Green	Operational
	Red	Failure
	Off	Disabled or power-down
Port Status (PORT)	Green	All ports are UP
	Amber	All least one port is down
	Off	All ports are disabled or shut down
Activity Status (ACT)	Green	Interface Module is Active or Standby
	Off	Interface Module is disabled or shut down

OC-3 Interface Module LEDs

The table below summarizes the LEDs for the OC-3 interface module.

Table 23: Interface Module LEDs

LED	Color/State	Description
Power (PWR)	Off	Disabled/no power to IM
	Green	Enabled and power rails on IM in range
Status (STAT)	Off	Disabled/power-down
	Red	Failure (on at reset)
	Amber	Booting (if local CPU)
	Green	Operational

LED	Color/State	Description
Carrier/Alarm (C/A)	Green	SFP receiving good remote signal
	Yellow	Remote or local alarm activated
Active/Loopback(A/L)	Green	SFP ready and operating normally
	Yellow	SFP port in loopback state

T1/E1 Interface Module LEDs

The table below summarizes the LEDs for the 16 T1/E1 interface module.

Table 24: 16 T1/E1 Interface Module LEDs

LED	Color/State	Description (two LEDs for eachT1/E1 port)
Active	Green	Active
	Blinking green	Standby
	Off	Operationally down; card is disabled or shut down
Port	Green	All ports up
	Blinking green	All ports up and one or more ports in a loopback state
	Amber	One or more configured ports are down
	Blinking amber	One or more configured ports are down and at least one configured port is in a loopback state
	Off	All ports disabled or shut down
PWR	Green	All power rails are within supported range
	Red	Disabled
	Off	No power on the interface module
STAT	Red	Failed
	Off	Disabled or powered down
	Blinking red	Booting
	Green	Active

The table below summarizes the LEDs for the 8 T1/E1 interface module.

Table 25: 8 T1/E1 Interface Module LEDs

LED	Color/State	Description
Active	Green	Active
	Green	Standby
	Off	Card is disabled or shut down
Port	Green	All ports up
	Amber	One or more configured ports are down
	Off	All ports disabled or shut down
PWR	Green	All power rails are within supported range
	Red	Disabled
	Off	No power on the interface module
STAT	Red	Failed
	Off	Disabled or powered down
	Green	Active

The table below summarizes the LEDs for the 32 T1/E1 interface module.

Table 26: 32 T1/E1 Interface Module LEDs

LED	Color/State	Description (two LEDs for eachT1/E1 port)
Active	Green	Active
	Blinking green	Standby
	Off	Operationally down; card is disabled or shut down
Port	Green	All ports up
	Blinking green	All ports up and one or more ports in a loopback state
	Amber	One or more configured ports are down
	Blinking amber	One or more configured ports are down and at least one configured port is in a loopback state
	Off	All ports disabled or shut down
STAT	Green	Operational
	Pulsing Green	Booting
	Red	Failure; On at reset

LED	Color/State	Description (two LEDs for eachT1/E1 port)
	Off	Disabled or power down
PWR	Green	IM power rails are in range and are enabled
	Off	Disabled; No power to IM

Serial Interface Module LEDs

The table below summarizes the LEDs for the serial interface module.

Table 27: Cisco ASR 907 Router Serial IM LEDs

LED Label	Color/State	Meaning
Power (PWR)	Green	All power rails are within spec.
	Red	Disabled
	Off	No Power
Operating Status (STAT)	Red	Failure
	Yellow	Booting (if IM has a local CPU)
	Green	Operational
	Off	No Power
68-Pin Connector LEDs	Green	At least one of the 4 ports is in an up state.
	Blinking Green	At least one of the 4 ports is passing traffic
	Yellow	All four ports are successfully initialized and in a down state
	Blinking Yellow	At least one of the port has failed
	Off	All the ports are not enabled (at POR)
12-in-1 Connector LEDs	Green	Port is passing traffic
	Yellow	Port successfully initialized and in a down state
	Blinking Yellow	Port has failed
	Off	Not Enabled (at POR)

Power Supply LEDs

The table below summarizes the power supply LEDs for both the AC and DC power supplies.

Table 28: Power Supply LEDs

LED	Color/State	Description
Input OK	Off	No Input Voltage
	Amber	Input voltage out of range
	Green	Input voltage within acceptable operating range
Output Fail	Off	Disabled/Forced Shut down/No input power
	Red	Power supply fault (internal failure such as over temperature)
	Green	Operational
	Blinking Red	Output ORING FET Failed

Fan Tray LEDs

The table below summarizes the fan tray LEDs.

Table 29: Fan Tray LEDs

LED	Color/State	Description
Status (TEMP)	Off	Disabled/power down
	Amber	Over temperature
	Green	OK
Fan (FAN)	Green	Fan rotation in range
	Amber	Fan fault
	Red	Two or more fan faults
Minor (MIN)	Off	No minor alarm
	Amber	Minor alarm
Major (MAJ)	Off	No major alarm
	Red	Major alarm
Critical (CRIT)	Off	No critical alarm
	Red	Critical alarm (defaults to ON upon RSP reset)

Alarm Conditions

The table below summarizes the meaning of alarm conditions on the Cisco ASR 907 Router.

Table 30: Alarm Condition Summary

Alarm Type	Alarm Meaning
Critical	RSP OIR
	Power supply OIR
	Port in down state
	Environmental sensor threshold exceeded (voltage, temperature)
	IM OIR
	IM crash
Major	Standby RSP in ROMmon mode
	RSP removed
	RSP failure
Info	Port administratively shut down