Cisco AS5800 Specifications

System Specifications

A single Cisco AS5800 consists of a Cisco 5814 dial shelf and a Cisco 7206 router shelf. Table A-1 describes the Cisco 5814 dial shelf specifications, and Table A-2 shows the router shelf network processor card factory-installed DRAM configuration.

For Cisco 7206 router shelf physical specification information, refer to the *Cisco 7206 Installation and Configuration Guide* that shipped with your router shelf.

Table A-1 Cisco 5814 Dial Shelf Specifications

Description	Specification
Dimensions (H x W x D)	28.0 x 17.4 x 23.6 in. (71.1 x 44.2 x 59.9 cm)
Component Weights	
Cisco 5814 dial shelf (with filter module, blower assembly, and 14 cards)	278 lb (126.1 kg)
Cisco 5814 dial shelf (with filter module, blower assembly, and no cards installed)	114 lb (51.7 kg)
Cisco 5814 dial shelf chassis (empty)	62 lb (28.1 kg)
Dial shelf backplane	2.5 lb (1.1 kg)
Dial shelf trunk card	8 lb each (3.6 kg)
Dial shelf modem card	8 lb each (3.6 kg)

Table A-1 Cisco 5814 Dial Shelf Specifications

Description	Specification
Component Weight (continued)	
Dial shelf controller card	8.5 lb each (3.8 kg)
Dial shelf blower assembly	27.5 lb (12.5 kg)
Dial shelf DC power-entry module	8 lb each (3.6 kg)
Dial shelf filter module	5.5 lb (2.5 kg)
AC-input power shelf (empty)	18.5 lb (8.4 kg)
AC-input power supply	14 lb each (6.4 kg)
AC-input power shelf safety cover	3.5 lb (1.6 kg)
Environmental Requirements	
Operational temperature Maximum operating temperature Acceptable temperature rise Maximum heat generated	23 to 104°F (–5° C to 40° C) 23 to 120°F (–5° C to 50° C) (not more than 72 hours) 30°C per hour 8,000 BTU
Backplane	14 slots
Power	44A at –48 VDC
Frequency	50/60 Hz
Heat dissipation	2,000W (6820 Btu/hr)
AC-input voltages and frequency	200 to 240 VAC 50 to 60 Hz
AC voltage and current	200 VAC at 16A maximum[1] wide input with power factor correction (PFC) 240 VAC at 7A maximum
AC cable	12 American Wire Gauge (AWG), with three leads, an IEC-320 receptacle on the power supply end, and a country-dependent plug on the power source end
DC-input voltage and current	–48 VDC to –60 VDC
DC-input cable	6 AWG for North American environments 10 mm^2 wire for international environments when connecting directly to a DC power source
DC voltages supplied and maximum, steady-state current (AC- and DC-input)	–48V, 54A maximum
Relative humidity	
Operating Nonoperating	10 to 90%, noncondensing 10 to 95%, noncondensing
Factory-Installed Memory	
Dial shelf controller card	32-MB DRAM
T1 or E1 trunk card (dial shelf)	32-MB DRAM
Modem card (dial shelf)	16-MB DRAM

Table A-1 Cisco 5814 Dial Shelf Specifications

Description	Specification
Regulatory Compliance	
Agency approvals	Safety: UL 1950, CSA 22.2 No. 950, EN60950, AUSTEL TS001, AS/NZS 3260, IEC 950
	Emissions: CFR 47 Part 15 Class A (FCC), CISPR22 Class B, EN55022 Class B, AS/NRZ 3548 Class B, ICES003, VCCI Class B
	Immunity: IEC 1000-3-2, IEC 1000-3-3, IEC-1000-4-2, IEC-1000-4-3, IEC-1000-4-4, IEC-1000-4-5, IEC-1000-4-6, IEC-1000-4-11, EN50082-1, EN50082-2
	For additional compliance information refer to the *Regulatory Safety and Compliance Information* documents that shipped with your system.

1 Each AC-input power supply requires a minimum of 15A service, with a 15A receptacle at the power source. The power cable supplied with the Cisco AS5800 AC-input power shelf uses a 16A male plug.

Table A-2 Router Shelf Network Processor Card DRAM SIMM Configurations

Total DRAM	DRAM Bank 0	Quantity	DRAM Bank 1	Quantity	Product Number
128 MB	U18 and U25 or U11 and U25	2 32-MB SIMMs	U4 and U12 or U42 and U52	2 32-MB SIMMs	MEM-NPE-128MB

Backplane Specifications

Table A-3 lists the backplane DC power specifications.

Table A-3 Backplane—DC Power Requirements

Description	Specification
Input voltage	
Minimum	–20 (10 ms)
Minimum/Nominal	–38 VDC
Nominal	–48 VDC
Maximum/Nominal	–72 VDC
Maximum	–75 (IS)
Output voltage	
Maximum	–38 VDC
Nominal	–48 VDC
Minimum	–75 VDC
Current	42 A
Minimum (SS)	3 A
Maximum (SS)	60 A
Peak (2 sec)	80 A
Circuit breaker	50 A

Table A-4 lists the backplane environmental specifications.

Table A-4 Backplane—Environmental Specifications

Description	Specification
Dimensions (H x W)	12.75 x 16.75 in. (32.4 x 42.5 cm)
Cooling	Maximum inlet air temperature is 131° F (55° C)
Temperature	
Operating	23 to 131° F (–5 to 55° C)
Nonoperating	–13 to 158° F (–25 to +70° C)
Humidity	
Operating	10 to 90%, noncondensing
Nonoperating	10 to 95%, noncondensing
Altitude	
Operating	9,843 ft (3,000 m) at 104° F (40° C)
Nonoperating	15,000 ft (4,570 m) over allowable temperature range
Thermal shock	
Operating	23 to 113° F (–5 to 45° C at 0.5° C) per minute
Nonoperating	–13 to 158° F (–25 to 70° C) with changeover time between 2 and 3 min
Vibration	
Operating	1.12 g from 3 to 500 Hz
Nonoperating	2 g from 3 to 500 Hz
Ripple and noise	200 mV
Battery feed noise	3 KHz band between 10 KHz and 20 MHz
Voice frequency noise	70 dBrnC
Radio frequency noise	500 mV_{RMS}
Long-term voltage drift	± –0.5%

Blower Assembly Specifications

Table A-5 lists blower assembly DC power requirements.

Table A-5 Blower Assembly—DC Power Requirements

Power	Specification
Voltage to backplane	
Maximum	–38 VDC
Nominal	–48 VDC
Minimum	–75 VDC
Current	
Minimum (SS)	3.0 A
Nominal (SS)	42.0 A
Maximum (SS)	54.0 A
Peak (2 sec)	60.0 A

Table A-6 lists the blower assembly environmental specifications, which are designed to meet NEC, NEBS, and ETSI requirements.

Table A-6 Blower Assembly—Environmental Specifications

Specification	Description
Cooling	Maximum inlet air temperature is 131° F (55° C)
Audible noise	Maximum acoustic noise level is 60 dBa
Temperature	
Operating Nonoperating	23 to 131° F (–5 to 55° C) –13 to 158° F (–25 to 70° C)
Humidity	
Operating Nonoperating	10 to 90%, noncondensing 10 to 95%, noncondensing
Altitude	
Operating Nonoperating	9,843 ft (3,000 m) at 104° F (40° C) 15,000 ft (4,570 m) over allowable temperature range
Thermal shock	
Operating Nonoperating	23 to 113° F at 32.9° F (–5 to 45° C at 0.5° C) per minute –13 to 158° F (–25 to 70° C) with changeover time between 2 and 3 min
Vibration	
Operating Nonoperating	1.12 g from 3 to 500 Hz 2 g from 3 to 500 Hz
Regulatory compliance	ENG-5769 UL 1950 CSA 22.2-950-936 EN 60 950 BABT AUSTEL IEC-801 Telcordia Technologies (formerly Bellcore) NEBS TR-NWT-000063 Telcordia Technologies (formerly Bellcore) NEBS TR-NWT-001089

Dial Shelf Controller Card Specifications

Table A-7 lists dial shelf controller card environmental specifications.

Table A-7 Dial Shelf Controller Card Environmental Specifications

Description	Specification
Cooling	Maximum inlet air temperature is 131° F (55° C)
Temperature	
Operating Nonoperating	23 to 131° F (–5 to 55° C) –13 to 158° F (–25 to 70° C)

Table A-7 Dial Shelf Controller Card Environmental Specifications (continued)

Description	Specification
Humidity	
Operating	10 to 90%, noncondensing
Nonoperating	10 to 95%, noncondensing
Altitude	
Operating	9,843 ft (3,000 m) at 104° F (40° C)
Nonoperating	15,000 ft (4,570 m) over allowable temperature range
Thermal shock	
Operating	23 to 113° F (–5 to 45° C at 0.5° C) per minute
Nonoperating	–13 to 158° F (–25 to 70° C) with change-over time between 2 and 3 minutes
Vibration	
Operating	1.12 Grms from 3 to 500 Hz
Nonoperating	2 Grms from 3 to 500 Hz
Ripple and noise	200 mV
Battery feed noise	3kHz band between 10KHz and 20 MHz
Voice frequency noise	70 dBrnC
Radio frequency noise	500 mV $_{RMS}$
Long-term voltage drift	± –0.5%

DC PEM Specifications

The PEMs provide –48 VDC power, which is distributed through the filter module to the dial shelf backplane. The analog isolators in the filter module are provided with 15 VDC. The PEMs suffer no damage if any or all outputs have no load (no load occurs when there are no cards plugged into the backplane) or if the maximum input voltage is exceeded; however, input voltages that exceed 75 V eventually trip the PEM 60 A circuit breaker, and you might have to reset the breaker as needed.

Table A-8 lists DC output voltage and current specifications.

Table A-8 Power Entry Module Power Specifications

Power	Description
Voltage to backplane	
Maximum	–38 VDC
Nominal	–48 VDC
Minimum	–75 VDC
Current	
Minimum (SS)	3 A
Nominal (SS)	42 A
Maximum (SS)	54 A
Peak (2 sec)	60 A
Circuit breaker	50A

Table A-9 lists the DC-input power supply environmental specifications, which are designed to meet NEC, NEBS, and ETSI requirements.

Table A-9 Power Entry Module Environmental Specifications

Specification	Description
Cooling	Maximum inlet air temperature is 131° F (55° C)
Temperature	
Operating	23 to 131° F (–5 to 55° C)
Nonoperating	–13 to 158° F (–25 to +70° C)
Humidity	
Operating	10 to 90%, noncondensing
Nonoperating	10 to 95%, noncondensing
Altitude	
Operating	9,843 ft (3,000 m) at 104° F (40° C)
Nonoperating	15,000 ft (4,570 m) over allowable temperature range
Thermal shock	
Operating	23° F to 113° F (–5° C to 45° C) at 0.5° C per minute
Nonoperating	–13° F to 158° F (–25° C to 70° C) with changeover time between 2 and 3 min
Vibration	
Operating	1.12 g from 3 to 500 Hz
Nonoperating	2 g from 3 to 500 Hz
Regulatory compliance	ENG-5769 UL 1950 CSA 22.2-950-95 EN 60 950 ACA TS001, AS3260

Filter Module Specifications

Table A-10 lists the filter module DC power requirements.

Table A-10 Filter—DC Power Requirements

Description	Specification
Input voltage	
Minimum	–20 (10 mS)
Minimum/Nominal	–38 VDC
Nominal	–48 VDC
Maximum/Nominal	–72 VDC
Maximum	–75 (IS)

Table A-10 Filter—DC Power Requirements

Description	Specification
Output voltage	
Maximum	–38 VDC
Nominal	–48 VDC
Minimum	–75 VDC
Current	
Minimum (SS)	3 A
Nominal (SS)	42 A
Maximum (SS)	60 A
Peak (2 sec)	80 A
Circuit breaker	50 A

Table A-11 lists the filter module environmental specifications.

Table A-11 Filter Module Environmental Specifications

Specification	Description
Cooling	Maximum inlet air temperature is 131° F (55° C)
Temperature	
Operating	23° F to 131° F (–5° C to 55° C)
Nonoperating	–13° F to 158° F (–25° C to 70° C)
Humidity	
Operating	10% to 90%, noncondensing
Nonoperating	10% to 95%, noncondensing
Altitude	
Operating	9,843 ft (3,000 m) at 104° F (40° C)
Nonoperating	15,000 ft (4,570 m) over allowable temperature range
Thermal shock	
Operating	23° F to 113° F (–5° C to 45° C at 0.5° C) per minute
Nonoperating	–13° F to 158° F (–25° C to 70° C) with changeover time between 2 and 3 minutes
Vibration	
Operating	1.12 g from 3 to 500 Hz
Nonoperating	2 g from 3 to 500 Hz
Ripple and noise	200 mV
Battery feed noise	3 kHz band between 10 kHz and 20 MHz
Voice frequency noise	70 dBrnC
Radio frequency noise	500 mV_{RMS}
Long-term voltage drift	± –0.5%

Table A-11 Filter Module Environmental Specifications

Specification	Description
Regulatory compliance	ENG-5769 UL 1950 CSA 22.2-950-95 EN 60 950 ACA TS001, AS3260 IEC-801 Telcordia Technologies (formerly Bellcore) NEBS TR-NWT-000063 Telcordia Technologies (formerly Bellcore) NEBS TR-NWT-001089

AC Power Module Specifications

The AC-input power supply operates between 200 and 240 VAC input voltage and supplies –48 VDC to the dial shelf. The AC-input power supply uses a power factor corrector (PFC) that automatically adjusts for the input voltage being supplied.

Table A-12 lists the AC-input power supply specifications.

Table A-12 AC-Input Power Supply—Specifications

Description	Specification
Input	
Input power requirement	2666.66 volt amps VA
Input voltage	200 to 240 VAC
Input frequency	50 to 60 Hz
Power factor	0.90 at 50% of full load; 0.99 at full load
Output	
Power output	2000W with a maximum configuration and one or two AC-input power supplies
Voltage out (V_O) set point:	–48.0 VDC typical. Frame ground strappable to either output terminal.
Current out (I_O) rated:	0 to 41.6A DC; 2000W maximum
Output current limit (steady state)	58.1A DC maximum
Efficiency	88% at full load, 240 VAC, with ORing diode
DC-output stud torque	25 in. lb
Environmental Characteristics	
Dimensions (H x W x D)	5.25 x 17 x 14.4 in. (13.32 x 43.2 x 35.88 cm)
Weight	Per power supply: 14.5 lb (6.6 kg) Empty power shelf: 18 lb (8.16 kg)
Heat dissipation	1037 Btu/hr
AC power cable supplied	12 AWG; 16A[1]
DC interconnect cable supplied	6 AWG, 2 pairs (black and red)

Table A-12 AC-Input Power Supply—Specifications

Description	Specification
Storage temperature	25.8 to 185 °F (–40 to 85 °C)
Operating Temperature (air inlet to power unit)	32 to 122 °F (0 to 50 °C) airflow front to back with 3 clearance for exhaust air in unpressurized enclosure
Acoustics	60 dBA typical; sound pressure level measured at 1 m
Humidity (noncondensing)	5% to 95%
Altitude	–200 to 13,000 ft (-61 to 3,962 m); adjust temperature at –7 °C per 1000 ft. above 8000 ft
Shock and Vibration	Lucent L-533809
ESD	IEC1000-4-2
Reliability (at 40 °C, 200 VAC, 1600 W)	7500 FITS per TR-EOP-000332 1.5 x 10^5 hours MTBF per RIN
Regulatory compliance	
Agency approvals	CE UL CSA VDE For compliance information refer to the *Cisco AS5800 Universal Access Server Regulatory Compliance and Safety Information* document that shipped with your system.

1 Each AC-input power supply requires a minimum of 15A service, with a 15A receptacle at the power source. The power cable supplied with the Cisco AS5800 AC-input power shelf uses a 16A male plug.

Enhanced Power Supply Specifications

The power supply for the enhanced AC-input power shelf operates between 200 and 240 VAC input voltage and supplies –48 VDC to the dial shelf. The power supply for the enhanced AC-input power shelf uses a power factor corrector (PFC) that automatically adjusts for the input voltage being supplied.

Table A-13 lists the specifications for the enhanced AC-input power shelf AC-input power supply.

Table A-13 Enhanced AC-Input Power Supply Specifications

Description	Specification
Input	
Input power requirement	2666.66 volt amps (VA)
Input voltage	200 to 240 VAC[1]
Input frequency	50 to 60 hertz (Hz)
Power factor	0.90 at 50% of full load; 0.99 at full load

Table A-13 Enhanced AC-Input Power Supply Specifications (continued)

Description	Specification
Output	
Power output	2000W with a maximum configuration and one or two AC-input power supplies
Voltage out (V_O) set point:	–48.0 VDC[2] typical
Current out (I_O) rated:	0 to 41.6 amps DC; 2000W maximum
Output current limit (steady state)	58.1 amps DC maximum
Efficiency	88% at full load, 240 VAC with ORing diode
DC-output stud torque	25 in. lb
Environmental Characteristics	
Dimensions (H x W x D)	5.25 x 17.32 x 13.6 in. (13.32 x 44 x 34.5 cm)
Weight	Per power supply: 11 lb (5 kg) Empty power shelf: 14 lb (6.4 kg)
Heat dissipation	7755 Btu/hr
AC power cable supplied	12 American Wire Gauge (AWG), 16-amp[3]
DC interconnect cable supplied	6 AWG, 2 pairs (black and red)
Storage temperature	25.8 to 185 °F (–40 to 85 °C)
Operating Temperature (air inlet to power unit)	32 to 122 °F (0 to 50 °C) airflow front to back with clearance for exhaust air in unpressurized enclosure
Acoustics	60 dBA typical; sound pressure level measured at 1 m
Humidity (noncondensing)	5 to 95%
Altitude	–200 to 13,000 ft (-61 to 3,962 meters); derate at –7 °C/1000 ft above 8000 ft
Shock and Vibration	Cisco Systems ENG-3396
ESD	IEC1000-4-2
Reliability (at 25 °C, 220 VAC, 2000 W)	150k hours MTBF
Regulatory compliance	
Agency approvals	CE UL CSA VDE For compliance information see the *Cisco AS5800 Universal Access Server Regulatory Compliance and Safety Information* document that shipped with your system.

1 VAC = volts alternating current.
2 VDC = volts direct current.
3 Each AC-input power supply requires a minimum of 15-amp service, with a 15-amp receptacle at the power source. The power cable supplied with the Cisco AS5800 enhanced AC-input power shelf uses a 16-amp male plug.

Cabling Specifications

This section describes and provides pinout information for the cables available for the Cisco AS5800 that connect to the dial shelf, the router shelf, and power modules and supplies. For pinouts and specifications of cables that connect to dial shelf ingress cards (T1/E1, T3) refer to the *Cisco AS5800 Universal Access Server Dial Shelf Card Guide*.

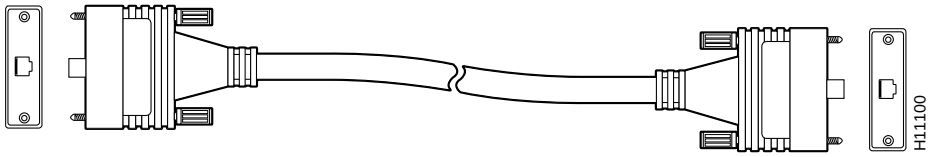
Dial Shelf Interconnect Port Adapter Cables

The dial shelf interconnect port adapter contains a single RJ-45 receptacle, which is used to connect the router shelf to the dial shelf. The cable used for this connection is a Cisco proprietary cable, customized with jackscrews to secure the connection. You must use this specially designed cable, which shipped with your dial shelf interconnect port adapter, to connect the dial shelf to the router shelf.

Caution Disconnecting this cable while the system is operating will result in a loss of all calls.

Figure A-1 shows the dial shelf interconnect cable with jackscrew connectors.

Figure A-1 Dial Shelf Interconnect Cable with Jackscrew Connectors



AC-Input Power Shelf Cables

The AC-input power shelf is equipped with four types of cables:

- Two AC power cords for AC input
- Two DC interconnect cables for DC output
- One DB-25 to DB-9 monitor cable for status signaling
- Two ground cables for grounding the power shelf to the dial shelf

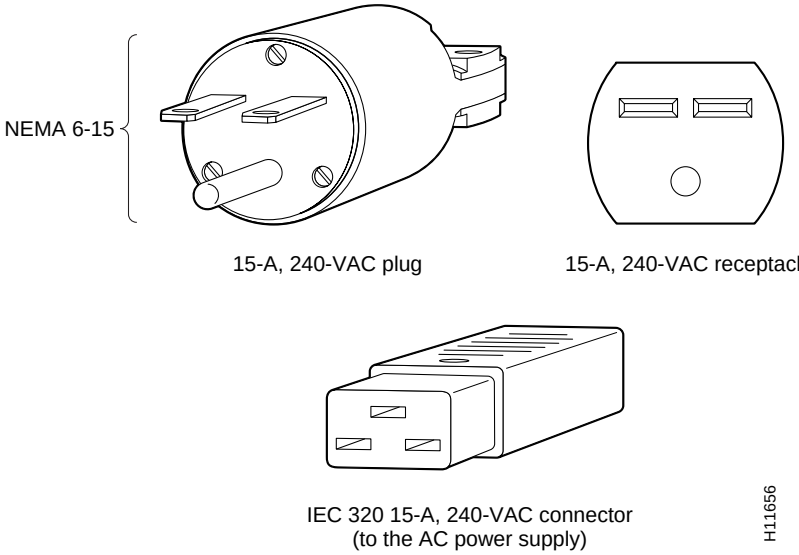
The AC-input connection uses a 15A/240 VAC power cord in Europe, Asia, and North America. The 15A connectors on the AC-input power shelf are incompatible with 15A power strips used in most equipment racks and with the power source used for the router shelf.

Caution Do not plug the AC-input power shelf into the same power source as the AC router shelf.

Note Wiring codes prevent the AC-input power cable from being used with the power strips in equipment racks.

Figure A-2 shows 15-A North American power connectors.

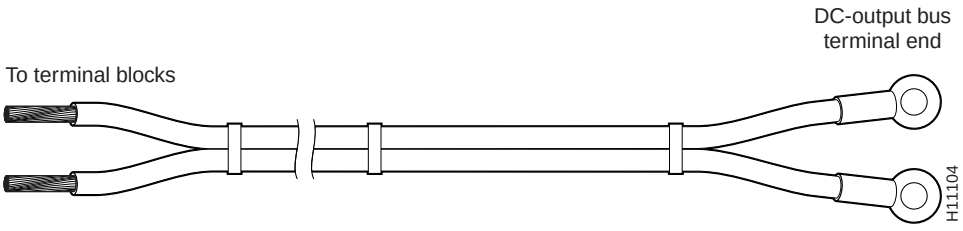
Figure A-2 15-Amp AC Power Cord Connector and Plug, and 15-Amp Receptacle



The European or Asian power cable is rated at 16A/250-VAC. The source-side power cable connector is either shipped to match local compliance, or wired at the installation site.

The DC interconnect cables (see Figure A-3) supplied with your AC-input power shelf attach to bus terminal studs in the AC-input power shelf using ring-lug connectors; the cables then connect to the DC terminal blocks in each PEM.

Figure A-3 DC Interconnect Cables



The monitor cable has a DB-25 connector on the AC-input power shelf end and a DB-9 connector on the dial shelf end that connects to the dial shelf filter module. Figure A-4 shows the monitor cable connectors and receptacles. The pinout of the monitor cable varies slightly between the standard and enhanced AC power shelves.

Figure A-4 Monitor Cable

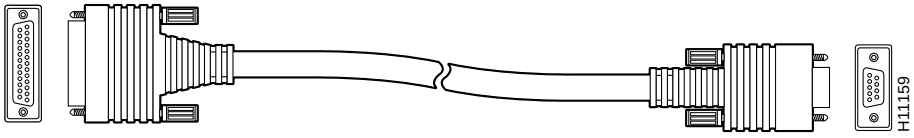


Table A-14 describes the cable pinout used with the AC power shelf.

Table A-14 Monitor Cable Pinout —AC Power Shelf

DB-9 Pin	Signal Description	DB-25 Pin[1]
1	AC power failure warning signal	11
2	AC power shelf overtemperature signal	10
3	AC power shelf fault signal	9
4	Ground	8
6	Ground	13
7	Ground	19
8	Ground	19
9	AC power shelf missing module	12

1 DB-25 pins not listed are not used.