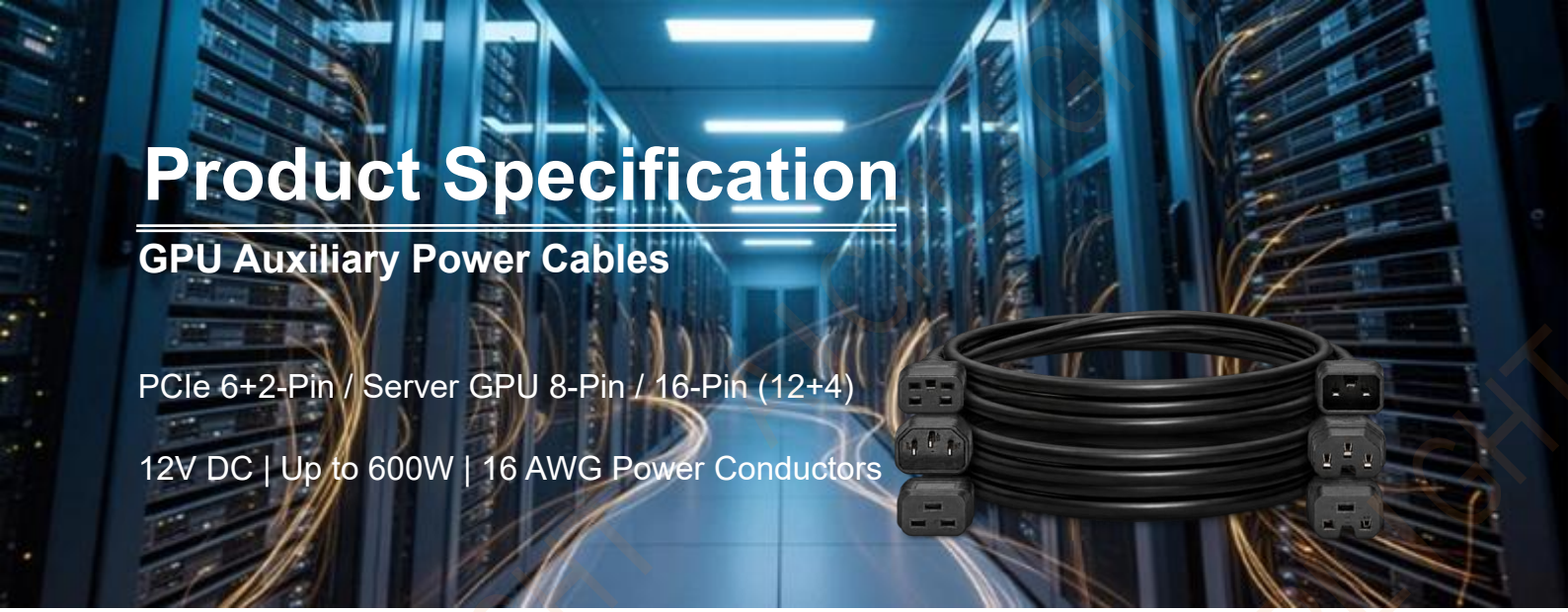


Product Specification

GPU Auxiliary Power Cables

PCIe 6+2-Pin / Server GPU 8-Pin / 16-Pin (12+4)

12V DC | Up to 600W | 16 AWG Power Conductors

Features

- Designed for GPUs, PCIe accelerator cards, and high-performance computing systems
- PCIe 6+2-pin, server GPU 8-pin, and 16-pin (12+4) power connector options
- Supports up to 150W through standard PCIe 8-pin GPU connections
- High-current 8-pin configuration for supported server GPUs and accelerator cards
- 16-pin (12+4) 12V-2x6 configuration supports power delivery up to 600W
- 16 AWG stranded copper power conductors
- Dedicated sense contacts for 16-pin high-power GPU connections
- High-current copper-alloy terminals
- Positive-latching connector housings for secure mating
- Flame-retardant connector housing materials
- Factory assembled and electrically tested

Compliance

- RoHS / REACH
- PCI Express Card Electromechanical (CEM) Auxiliary Power Interface
- PCIe 5.1 / 12V-2x6 for 16-pin (12+4) Configuration
- UL 94V-0 Connector Housing Material

Applications

- Server GPUs and PCIe Accelerator Cards
- AI and HPC Computing Systems
- Workstation and Graphics Cards
- High-Power PCIe Add-In Cards

Description

AICPLIGHT GPU Auxiliary Power Cables are designed to provide reliable 12V DC power connections for graphics cards, server GPUs, PCIe accelerator cards, and high-performance AI and HPC computing systems.

The product family includes traditional PCIe 6+2-pin power connections, high-current 8-pin auxiliary connections for supported server GPUs and accelerator cards, and next-generation 16-pin (12+4) power connections for high-power PCIe graphics cards.

The 6+2-pin configuration supports both 6-pin and 8-pin PCIe GPU power interfaces, providing up to 75W or 150W respectively. The dedicated server GPU 8-pin configuration is designed for platforms that use an EPS12V-style 8-pin auxiliary power interface and can support higher board-power requirements. The 16-pin (12+4) configuration uses the current 12V-2x6 architecture and supports power delivery up to 600W for compatible high-performance GPUs.

High-current copper-alloy terminals, 16 AWG stranded copper power conductors, positive-locking connector housings, and factory electrical testing provide reliable power delivery under sustained GPU workloads.

Product Performance Specifications

1、Model Configuration

Parameter	GPC-6+2	GPC-8	GPC-12+4
Product Type	PCIe GPU Auxiliary Power Cable	Server GPU Auxiliary Power Cable	High-Power GPU Auxiliary Power Cable
Cable Configuration	8-Pin to 6+2-Pin	8-Pin Auxiliary Power	16-Pin (12+4) Auxiliary Power
GPU-Side Interface	PCIe 6+2-Pin	8-Pin EPS12V-Type	16-Pin 12V-2x6
Nominal Voltage	12V DC	12V DC	12V DC
Maximum Interface Power	75W (6-Pin) / 150W (8-Pin)	Up to 225W for supported server GPU applications	Up to 600W
Power Conductor Gauge	16 AWG	16 AWG	16 AWG
Sense / Signal Wire Gauge	Integrated with Ground/Sense Pins		28 AWG
Power Contacts	3 × +12V	4 × +12V	6 × +12V
Ground Contacts	3 × GND + 2 Sense/GND	4 × GND	6 × GND
Sense Contacts	2		4
Connector Pitch	4.20 mm	4.20 mm	3.00 mm
Connector Locking	Positive Latch	Positive Latch	Positive Latch

2、Electrical Characteristics

Parameter	GPC-6+2	GPC-8	GPC-12+4
Nominal Supply Voltage	12V DC	12V DC	12V DC
Standard Power Capability	75W / 150W	Up to 225W	Up to 600W
Power Conductor Size	16 AWG	16 AWG	16 AWG
Power Contact Current Capability	High-Current	High-Current	Up to 9.2A per Power Contact
Polarity	+12V / GND	+12V / GND	+12V / GND + Sense
Continuity Test	100%	100%	100%
Pinout Verification	100%	100%	100%

3、Connector Pin Architecture

Connector Type	+12V Contacts	Ground Contacts	Sense / Signal Contacts
PCIe 6-Pin	3	2 Ground + 1 Sense	1
PCIe 8-Pin / 6+2-Pin	3	3 Ground	2 Sense/Ground
Server GPU EPS12V-Type 8-Pin	4	4	
12V-2x6 16-Pin	6	6	4

4、Wire and Connector Construction

Parameter	Specification
Power Conductor	Stranded Copper
Power Wire Gauge	16 AWG
16-Pin Sense Wire Gauge	28 AWG
Wire Insulation Temperature Rating	105°C
Terminal Material	Copper Alloy
Connector Housing	High-Temperature Thermoplastic
Housing Flammability	UL 94V-0
Connector Color	Black
Termination Method	Crimp
Connector Retention	Positive Locking Latch

5、Mechanical Characteristics

Parameter	PCIe 6+2 / 8-Pin	16-Pin (12+4)
Connector Pitch	4.20 mm	3.00 mm
Connector Durability	≥30 Mating Cycles	≥50 Mating Cycles
Cable Construction	Individual Insulated Conductors	Individual Power and Sense Conductors
Cable Flexibility	Flexible Internal Equipment Wiring	Flexible Internal Equipment Wiring

6、Environmental Characteristics

Parameter	Specification
Wire Temperature Rating	Up to 105°C
Connector Housing Flammability	UL 94V-0
Installation Environment	Internal Server / Workstation / Computing Equipment
RoHS	Compliant
REACH	Compliant

Handling and Safety Precautions：

- **Power Isolation:** Turn off the system and disconnect AC power before installing, removing, or replacing the GPU power cable. Do not connect or disconnect GPU power connectors while the system is powered.
- **Connector Compatibility:** Verify the connector type and pinout before installation. PCIe 6+2-pin, EPS12V-type 8-pin, and 16-pin (12+4) connectors are not interchangeable unless specifically supported by the equipment.
- **Secure Connection:** Insert connectors fully until the locking latch is engaged. Incomplete insertion may increase contact resistance and cause overheating or connector damage.
- **16-Pin Connector Handling:** For 12V-2x6 connectors, ensure the connector is fully seated before applying power. Avoid sharp bending or excessive side-loading near the connector housing.
- **Cable Handling:** Avoid excessive pulling, twisting, crushing, pinching, or stretching of the cable. Do not route cables across sharp edges or under components that may damage the insulation.
- **Bend Radius:** Maintain a gradual cable bend and avoid tight bends immediately adjacent to the connector. Allow sufficient clearance for the cable to exit the connector without mechanical stress.
- **Power Rating:** Use the cable only within the specified voltage and power ratings. Do not exceed the rated power capability of the cable, connector, power supply, GPU, or server platform.
- **Connector Protection:** Keep terminals and connector housings clean and dry. Avoid touching contacts or allowing dust, oil, moisture, or conductive debris to enter the connector.
- **Inspection:** Inspect the cable, terminals, connector housing, latch, and insulation before use. Do not use cables showing discoloration, deformation, loose terminals, damaged insulation, overheating, or other visible defects.
- **Modification:** Do not splice, re-pin, extend, repair, or modify the cable or connector unless performed through an approved manufacturing process.

Ordering Information

PN	Description
GPC-6+2	8-Pin to 6+2-Pin PCIe GPU Auxiliary Power Cable
GPC-8	8-Pin Auxiliary Power Cable for Server GPUs and PCIe Accelerator Cards
GPC-12+4	16-Pin (12+4) GPU Auxiliary Power Cable for PCIe Graphics Cards