

Part Number: PL-RJ45U6

High-performance Category 6 U/UTP RJ45 modular plug engineered for professional structured-cabling termination and reliable Gigabit Ethernet connectivity. The PL-RJ45U6 provides an unshielded 8P8C interface for Category 6 copper channels up to 250 MHz.

Designed for 100% copper solid or stranded conductors within the approved termination range, with 15 µin hard-gold contact plating as standard and 30 µin or 50 µin plating available as optional upgrades. Suitable for PoE, PoE+ and PoE++ applications when used in a compliant installed channel.

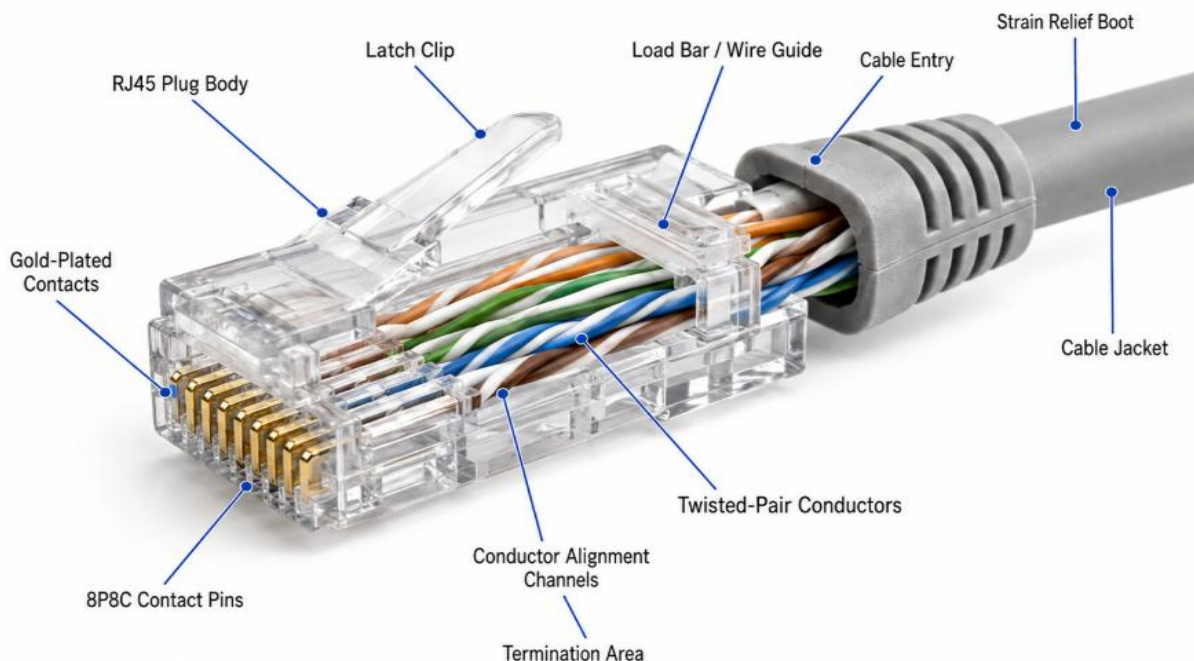
8P8C RJ45 Modular Plug	15 µin Gold Standard	250 MHz Category 6	PoE++ IEEE 802.3bt Types 3 / 4
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"Engineered for Reliable Termination. Built for Long-Term Connectivity."

1. General Description

PLANET PL-RJ45U6 is a Category 6 unshielded RJ45 modular plug designed for termination of four-pair U/UTP copper cables and patch leads. Its 8P8C contact system, robust transparent polycarbonate body and controlled crimp termination provide consistent electrical and mechanical performance for professional network installations.

CAT6 U/UTP RJ45 Connector Construction



CAT6 U/UTP RJ45 Connector Construction - Annotated 3D View

2. Construction

Parameter	Specification
Product Type	Category 6 U/UTP RJ45 modular plug
Part Number	PL-RJ45U6
Interface	RJ45 / 8P8C male modular plug, unshielded
Housing	Transparent high-impact polycarbonate
Contact Base Material	Phosphor bronze / high-conductivity copper alloy
Gold Contact Plating	15 µin hard gold over nickel standard; 30 µin and 50 µin optional
Termination	Single-piece crimp termination
Cable / Conductor Compatibility	4-pair U/UTP copper cable; 23-26 AWG solid or stranded conductors
Wiring Scheme	T568B standard; T568A supported
Locking Mechanism	Integral resilient RJ45 locking latch

TECHNICAL SPECIFICATIONS

CAT6 U/UTP RJ45 | PL-RJ45U6

3. Electrical Characteristics

Parameter	Specification
Rated Frequency	1-250 MHz
Rated Voltage	30 V
Insulation Resistance	≥ 10 GΩ
Contact Resistance	≤ 20 mΩ initial
Dielectric Withstand	Compliant with applicable IEC 60603-7-4 qualification requirements
PoE Remote Power Support	IEEE 802.3af / 802.3at / 802.3bt applications, subject to compliant channel design

STANDARD GOLD CONTACT PLATING: 15 µin hard gold over nickel. OPTIONAL: 30 µin or 50 µin.

4. Mechanical Characteristics

Parameter	Value
Connector Mating Durability	≥ 750 mating cycles
Housing Material	Transparent high-impact polycarbonate
Locking Latch	Integral resilient locking tab
Operating Temperature	-20°C to +60°C
Storage Temperature	-40°C to +70°C

5. Technical Performance

Category 6 connecting-hardware performance is specified over 1-250 MHz. The connector is intended for use as part of a compliant Category 6 / Class E channel; final channel performance depends on compatible cable, termination quality and installed-link conditions.

Performance Item	Requirement	Performance Item	Requirement	Application	Requirement	Status
Rated Frequency	1-250 MHz	Insertion Loss	Category 6 compliant	1000BASE-T	Supported	Baseline
NEXT / PSNEXT	Category 6 compliant	Return Loss	Category 6 compliant	PoE / PoE+	Supported	Baseline
ACR-F / PSACR-F	Category 6 compliant	TCL / Balance	Category 6 compliant	4-Pair PoE	Supported*	Baseline
Wire Map	8P8C correct	Contact Continuity	100% verified	T568A / T568B	Supported	QA

* IEEE 802.3bt / PoE++ support is subject to compliant channel design, conductor size, termination quality and thermal limits.

APPLICATIONS, FEATURES & COMPLIANCE	CAT6 U/UTP RJ45 PL-RJ45U6
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6. Applications

- Category 6 structured cabling systems
- Gigabit Ethernet networks (1000BASE-T)
- Patch-cord and equipment-cord assembly
- Enterprise, commercial and data-center networks
- IP CCTV, VoIP and wireless access-point connections
- PoE / PoE+ / PoE++ powered-device connections
- Professional U/UTP copper termination projects

7. Transmission Performance

- Supports 10/100/1000 Mbps Ethernet applications
- Category 6 frequency performance up to 250 MHz
- Designed for Category 6 / Class E channel use with compliant components
- Controlled contact geometry supports reliable NEXT, Return Loss and insertion-loss performance

8. Key Features

- 8P8C unshielded RJ45 modular plug for Category 6 applications
- 15 µin hard-gold contact plating as standard
- 30 µin and 50 µin hard-gold plating available as optional upgrades
- Transparent high-impact polycarbonate housing with resilient locking latch
- Single-piece crimp design for reliable termination and consistent contact position
- Compatible with 23-26 AWG solid or stranded 100% copper conductors within approved cable dimensions
- Designed for IEEE 802.3af / 802.3at / 802.3bt remote-power applications in a compliant channel

9. Standards Compliance

Standard / Certification	Status
ANSI/TIA-568.2-E	Baseline Category 6 connecting-hardware compliance
ISO/IEC 11801-1 (Class E cabling support)	Baseline design support
IEC 60603-7-4	8-way unshielded connector interface up to 250 MHz
IEEE 802.3af / 802.3at / 802.3bt	PoE / PoE+ / 4-Pair PoE application support
RoHS	Compliant, subject to applicable production declaration
REACH	Subject to applicable material declaration

QUALITY, OPTIONS & WARRANTY

PL-RJ45U6 | CAT6 U/UTP

10. Quality Assurance

Manufactured under controlled quality procedures to ensure:

- Consistent contact alignment and crimp geometry
- Stable electrical performance and reliable continuity
- Controlled gold-plating thickness according to the ordered configuration

Validation: Production inspection should include housing and latch integrity, contact position, plating-thickness verification, dimensional checks and terminated-sample continuity / wire-map testing. Category 6 transmission verification is available upon consultant or project request when supported by the applicable test evidence.

11. Gold Plating Options

- Standard: 15 µin (0.38 µm) hard gold over nickel
- Optional upgrade: 30 µin (0.76 µm) hard gold over nickel
- Premium option: 50 µin (1.27 µm) hard gold over nickel
- Optional plating upgrades do not change the PL-RJ45U6 Category 6 / 250 MHz interface classification

12. Warranty

25-Year System Warranty

Subject to proper installation, use of approved PLANET system components and applicable warranty terms.

Packing

BOX	100 PCS
Carton	100 Box