

24AWG Stranded Bare Copper | 250 MHz | Gigabit Ethernet | Unshielded RJ45–RJ45

Product Overview

PLANET Category 6 U/UTP Unshielded Patch Cords are engineered for reliable high-performance connections in structured cabling systems. Four balanced unshielded twisted pairs of stranded bare copper conductors use controlled twist rates to limit crosstalk and maintain signal integrity. Designed for Category 6 / Class E applications up to 250 MHz and Gigabit Ethernet networks, the unshielded construction provides flexibility and easy installation in standard commercial and residential environments.



Key Features

- Category 6 U/UTP unshielded patch cord
- Performance up to 250 MHz
- Supports 10/100/1000BASE-T Ethernet
- 24AWG stranded bare copper conductors – No CCA
- Four balanced unshielded twisted pairs
- No metallic shield or drain wire
- Flexible and easy-to-install unshielded construction
- Unshielded RJ45 8P8C modular plugs
- **15 µin gold-plated contacts (standard); 30 µin and 50 µin available as options**
- Molded strain-relief boot
- Supports PoE, PoE+, and PoE++ subject to compliant channel design
- 100% continuity and wire-map tested
- PVC standard / LSZH optional

Standards & Compliance

Reference	Requirement / Application
ANSI/TIA-568.2-D	Category 6 balanced twisted-pair cabling
ISO/IEC 11801-1	Class E generic cabling
IEC 61156-6	Symmetrical pair/quad patch cords
IEC 60603-7-4	Unshielded Category 6 connector interface up to 250 MHz
IEEE 802.3ab	1000BASE-T Gigabit Ethernet
IEEE 802.3af / 802.3at / 802.3bt	PoE / PoE+ / 4-Pair PoE
RoHS / REACH	Subject to applicable certification/declaration

Cable Construction

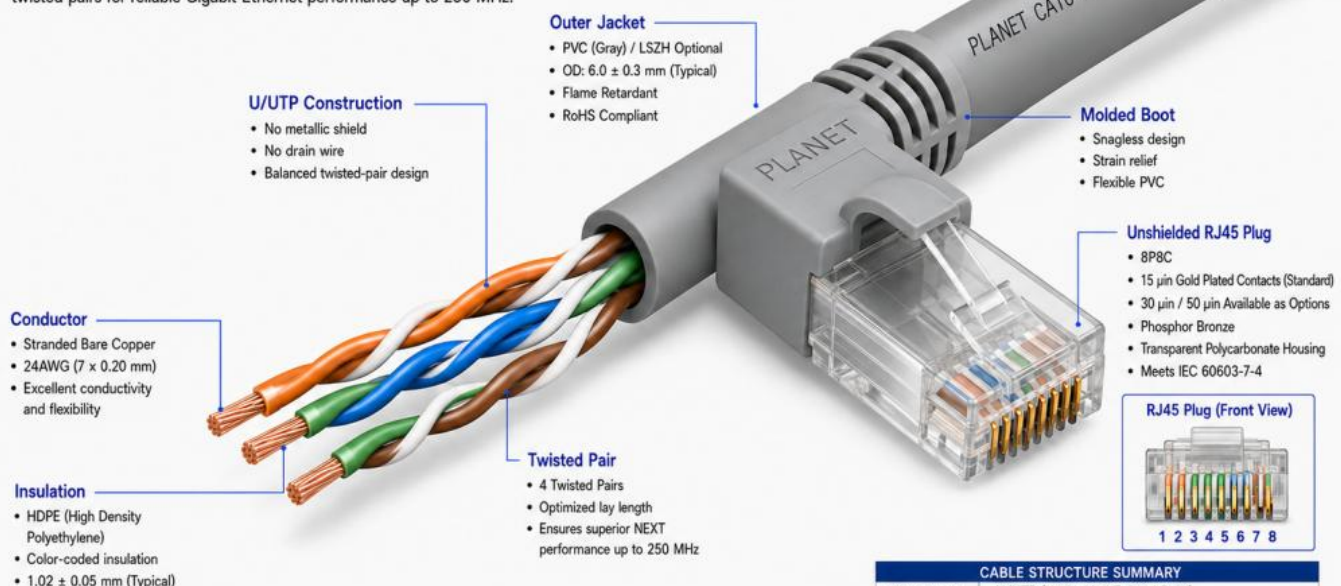
Parameter	Specification
Product Type	Category 6 U/UTP Unshielded Patch Cord
Cable Construction	U/UTP – four unshielded twisted pairs with no overall metallic shield
Number of Pairs	4 Twisted Pairs / 8 Conductors
Conductor	100% Stranded Bare Copper
Nominal Conductor Size	24AWG
Typical Strand Construction	7 × 0.20 mm stranded conductor (typical)
Conductor Insulation	HDPE / High-performance PE
Overall Shield	None (unshielded construction)
Drain Wire	Not applicable
Outer Jacket	PVC Standard / LSZH Optional
Nominal Cable O.D.	6.0 ± 0.3 mm (typical)
Connector Type	Unshielded RJ45, 8P8C, Male-to-Male
Contact Material	Phosphor Bronze
Gold Plating Thickness	15 µin standard; 30 µin and 50 µin available as options
Wiring Scheme	T568B Standard / T568A available on request
Strain Relief	Molded Boot
Connector Shielding	Unshielded / non-metallic plug housing

U/UTP Cable Construction

PLANET Cat6 U/UTP Patch Cord – Construction

Typical Category 6 U/UTP patch cord construction (3D schematic)

PLANET Cat6 U/UTP patch cord uses four balanced unshielded twisted pairs for reliable Gigabit Ethernet performance up to 250 MHz.



U/UTP Construction:

No overall metallic shield.
Four unshielded twisted pairs (UTP).

NOTES:

- This is a 3D schematic illustration of typical Cat6 U/UTP patch cord construction.
- Actual product may vary in appearance.
- All measurements are typical values.

CABLE STRUCTURE SUMMARY	
Construction	U/UTP (Unshielded Twisted Pairs)
Conductor	24AWG Stranded Bare Copper
Pairs	4 Pairs (8 Conductors)
Shielding	None
Connector	Unshielded RJ45 8P8C
Jacket	PVC / LSZH Optional
Performance	Up to 250 MHz (Category 6)
Application	1000BASE-T Gigabit Ethernet, PoE / PoE+ / PoE++

Electrical Characteristics

Parameter	Specification
Characteristic Impedance	100 Ω nominal
Frequency Range	1–250 MHz
Parameter	Specification
DC Resistance	Compliant with applicable Category 6 patch-cord requirements
DC Resistance Unbalance	Compliant with applicable Category 6 requirements
Insulation Resistance	Compliant with applicable Category 6 patch-cord requirements
Conductor Continuity	Continuous end-to-end
Propagation Delay	Category 6 compliant
Delay Skew	≤ 45 ns/100 m

Transmission Performance

Designed to meet applicable Category 6 patch-cord and Class E channel transmission requirements over the frequency range of 1–250 MHz.

Parameter	Specification
Insertion Loss	Category 6 Compliant
NEXT / PSNEXT	Category 6 Compliant
ACR-N / PSACR-N	Category 6 Compliant
ACR-F / PSACR-F	Category 6 Compliant
Return Loss	Category 6 Compliant
Propagation Delay / Delay Skew	Category 6 Compliant

EMI / RFI Performance

U/UTP construction relies on balanced pair geometry and controlled twist rates to limit crosstalk and electromagnetic coupling. It contains no metallic shield or drain wire and does not require shield bonding or grounding. Appropriate separation from power cables and other interference sources should be maintained.

Network & PoE Application Support

Parameter	Specification
10BASE-T	Supported
100BASE-TX	Supported
1000BASE-T	Supported
Maximum Frequency	250 MHz
Standard Channel Length	Up to 100 m in a compliant Category 6 channel
IEEE 802.3af	PoE
IEEE 802.3at	PoE+
IEEE 802.3bt	4-Pair PoE / PoE++ subject to compliant channel design

Mechanical & Environmental

Parameter	Specification
Connector Mating Durability	≥ 750 mating cycles
Minimum Bend Radius	$\geq 4 \times$ cable O.D. under installed conditions
Operating Temperature	-20°C to +60°C (typical)
Standard Jacket	PVC
Optional Jacket	LSZH

Applications

- Data centers and enterprise networks
- Telecommunications and server rooms
- Patch panel-to-switch connections
- Gigabit Ethernet networks
- Wireless access points
- IP surveillance and access control
- PoE / PoE+ / PoE++ devices
- Office, commercial and residential structured cabling

Available Colors & Standard Lengths

Parameter	Specification
Colors	Gray, Red, Yellow, Blue, Green, Black
Standard Lengths	0.25 m, 0.5 m, 1 m, 2 m, 3 m, 5 m, 10 m
Custom Options	Additional colors and lengths available upon request

Ordering Information

Product Family	Color Code	Length	Example Ordering Code
Cat6 U/UTP 24AWG	GY = Gray	0.25 m	PL-PC025U6GY
Cat6 U/UTP 24AWG	RD = Red	0.5 m	PL-PC05U6RD
Cat6 U/UTP 24AWG	YW = Yellow	1 m	PL-PC01U6YW
Cat6 U/UTP 24AWG	BL = Blue	2 m	PL-PC02U6BL
Cat6 U/UTP 24AWG	GR = Green	3 m	PL-PC03U6GR
Cat6 U/UTP 24AWG	BK = Black	5 m	PL-PC55U6BK

Packing 1pc / PE bag

length	0.25M	0.5M	1M	2M	3M	5M	10M
quantity/carton	300	250	200	125	100	75	40

Quality Assurance & Testing

Each PLANET Cat6 U/UTP Patch Cord should undergo 100% wire-map, continuity, open/short, miswire and visual/mechanical inspection. For consultant and tender projects, transmission performance may be verified using an approved Category 6 certification analyzer. ETL/UL certification could be provided if needed.