

24AWG Stranded Bare Copper | 500 MHz | 10 Gigabit Ethernet | Unshielded RJ45–RJ45

Product Overview

PLANET Category 6A U/UTP Unshielded Patch Cords are engineered for high-performance 10 Gigabit Ethernet connections in structured cabling systems. Four balanced unshielded twisted pairs of stranded bare copper conductors, controlled twist rates and a non-metallic cross-web separator help control pair-to-pair and alien crosstalk while maintaining signal integrity. Designed for Category 6A / Class EA applications up to 500 MHz and 10GBASE-T channels up to 100 m when installed as part of a compliant cabling system.



Key Features

- Category 6A U/UTP unshielded patch cord
- Performance up to 500 MHz
- Supports 10GBASE-T and legacy Ethernet applications
- 24AWG stranded bare copper conductors – No CCA
- Four balanced unshielded twisted pairs
- No metallic shield or drain wire
- Non-metallic cross-web separator for improved crosstalk control
- 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 6A balanced twisted-pair cabling
ISO/IEC 11801-1	Class EA generic cabling
IEC 61156-6	Symmetrical pair/quad patch cords
IEC 60603-7-41	Unshielded Category 6A connector interface up to 500 MHz
IEEE 802.3an	10GBASE-T 10 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 6A U/UTP Unshielded Patch Cord
Cable Construction	U/UTP – four unshielded twisted pairs with a non-metallic cross-web separator
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
Pair Separator	Non-metallic cross-web separator for pair spacing and crosstalk control
Shielding / Drain Wire	None / Not applicable
Outer Jacket	PVC Standard / LSZH Optional
Nominal Cable O.D.	6.3 ± 0.3 mm (typical)

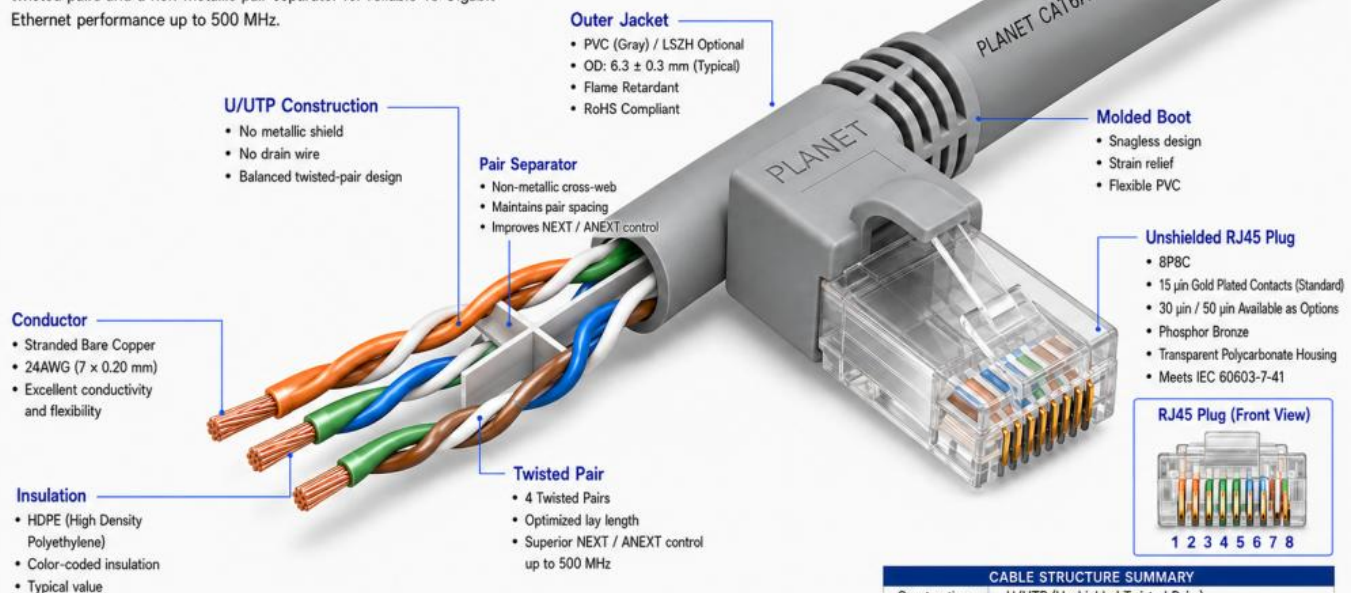
Parameter	Specification
Connector Type	Unshielded RJ45, 8P8C, Male-to-Male
Contact Material	Phosphor Bronze
Gold Plating Thickness	15 µin standard; 30 µin and 50 µin available as options
Wiring Scheme	T568B Standard / T568A available on request
Strain Relief	Molded Boot
Connector Shielding	Unshielded / non-metallic plug housing

U/UTP Cable Construction

PLANET Cat6A U/UTP Patch Cord – Construction

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

PLANET Cat6A U/UTP patch cord uses four balanced unshielded twisted pairs and a non-metallic pair separator for reliable 10 Gigabit Ethernet performance up to 500 MHz.



U/UTP Construction:
No overall metallic shield.
Four unshielded twisted pairs with a non-metallic separator.

NOTES:

- This is a 3D schematic illustration of typical Cat6A 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)
Pair Separator	Non-metallic cross-web
Shielding	None
Connector	Unshielded RJ45 8P8C
Jacket	PVC / LSZH Optional
Performance	Up to 500 MHz (Category 6A)
Application	10GBASE-T, Gigabit Ethernet, PoE / PoE+ / PoE++

Electrical Characteristics

Parameter	Specification
Characteristic Impedance	100 Ω nominal
Frequency Range	1–500 MHz
DC Resistance	Compliant with applicable Category 6A patch-cord requirements
DC Resistance Unbalance	Compliant with applicable Category 6A requirements
Insulation Resistance	Compliant with applicable Category 6A patch-cord requirements
Conductor Continuity	Continuous end-to-end
Propagation Delay	Category 6A compliant
Delay Skew	≤ 45 ns/100 m

Transmission Performance

Designed to meet applicable Category 6A patch-cord and Class EA channel transmission requirements over the frequency range of 1–500 MHz, including alien-crosstalk performance required for 10GBASE-T applications.

Parameter	Specification
Insertion Loss	Category 6A Compliant
NEXT / PSNEXT	Category 6A Compliant
ACR-N / PSACR-N	Category 6A Compliant
ACR-F / PSACR-F	Category 6A Compliant
Return Loss	Category 6A Compliant
PSANEXT / PSAACR-F	Category 6A Compliant

Crosstalk & EMI Performance

Category 6A U/UTP construction relies on balanced pair geometry, optimized twist rates and a non-metallic cross-web separator to control internal and alien crosstalk up to 500 MHz. It contains no metallic shield or drain wire and does not require shield bonding or grounding. Appropriate separation from power cables and strong interference sources should be maintained.

Network & PoE Application Support

Parameter	Specification
10/100/1000BASE-T	Supported
10GBASE-T (IEEE 802.3an)	Supported in a compliant Category 6A channel
Maximum Frequency	500 MHz
Standard Channel Length	Up to 100 m in a compliant Category 6A channel
IEEE 802.3af	PoE
IEEE 802.3at	PoE+
IEEE 802.3bt	4-Pair PoE / PoE++ subject to compliant channel design
Backward Compatibility	Category 6 / 5e applications with compatible interfaces

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
- 10 Gigabit Ethernet and high-bandwidth networks
- Wi-Fi 6 / 6E / 7 wireless access points
- IP surveillance and access control
- PoE / PoE+ / PoE++ devices
- High-density office, commercial and data-center cabling

Available Colors & Standard Lengths

Parameter	Specification
Colors	Gray, Red, Yellow, Blue, Green
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
Cat6A U/UTP 24AWG	GY = Gray	0.25 m	PL-PC025U6AGY
Cat6A U/UTP 24AWG	RD = Red	0.5 m	PL-PC05U6ARD
Cat6A U/UTP 24AWG	YW = Yellow	1 m	PL-PC01U6AYW
Cat6A U/UTP 24AWG	BL = Blue	2 m	PL-PC02U6ABL
Cat6A U/UTP 24AWG	GR = Green	3 m	PL-PC03U6AGR
Cat6A U/UTP 24AWG	BK = Black	5 m	PL-PC55U6ABK

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 Cat6A 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 6A certification analyzer. ETL/UL certification could be provided if needed.