Cat6A U/UTP Patch Cord — LSZH

4 Pairs | 23 AWG Copper | 500 MHz | RJ45 to RJ45



1. GENERAL DESCRIPTION

Cat6A U/UTP patch cord is a factory-terminated Ethernet cable for connecting network equipment such as switches, routers, patch panels, servers and wall outlets in LANs. It features four twisted pairs of 23 AWG copper conductors, RJ45 plugs at both ends and a Low Smoke Zero Halogen (LSZH) jacket, making it suitable for indoor installations in buildings, offices and data rooms where low smoke and halogen-free emission are required. It supports 10/100/1000BASE-T and 10GBASE-T Ethernet over the full 100 m channel length. Characterised up to 500 MHz.

2. KEY FEATURES

- Copper conductors for low attenuation and stable, reliable performance
- LSZH jacket: low smoke, zero halogen, reduced toxic and corrosive gas emission in fire
- Cat6A performance up to 500 MHz — 10GBASE-T over the full 100 m channel
- Factory-fitted RJ45 plugs at both ends with strain-relief boots
- Available in standard lengths from [0.5 m to 10 m]

3. APPLICATIONS

- Connecting switches, routers, patch panels, servers and wall outlets in LAN and data-room cabling
- Gigabit Ethernet (1000BASE-T) and 10GBASE-T links in LAN and data-room cabling
- Connecting PCs, laptops, IP cameras, wireless access points and VoIP phones to network outlets
- Indoor installations that require low-smoke, halogen-free cabling

4. APPLICABLE STANDARDS

- ANSI/TIA-568.2 — Category 6A balanced twisted-pair cabling
- ISO/IEC 11801 — Class EA generic cabling (Category 6A), IEC 61156-6 and IEC 60603-7 (RJ45 plug)
- IEC 60332-1 — Flame propagation (single vertical cable)
- IEC 60754-1 / -2 — Halogen content and acidity of gases
- IEC 61034 — Smoke density

5. CABLE CONSTRUCTION

Conductor	[Stranded bare copper, 23 AWG (7 × 0.23 mm)]
Insulation	Solid polyethylene (PE / HDPE)
Pairs	4 twisted pairs, different twist lengths to minimise crosstalk

Pair Colour Code	White-Blue / Blue, White-Orange / Orange, White-Green / Green, White-Brown / Brown
Screening	None (U/UTP — unshielded)
Separator	[Cross filler]
Connectors	RJ45 (8P8C) plug at both ends, [gold-plated contacts], strain-relief boot; wired straight-through [T568B]
Outer Jacket	LSZH (Low Smoke Zero Halogen) — colour: [Grey / Blue / White]
Marking	CAT6A U/UTP 4P 23AWG LSZH [standard]
Length / Packing	[0.5 / 1 / 2 / 3 / 5 m] — individually bagged [and labelled]

Pair colour code

Pair	Conductor 1 (Tip)	Conductor 2 (Ring)
1	White / Blue	Blue
2	White / Orange	Orange
3	White / Green	Green
4	White / Brown	Brown

6. MECHANICAL & ENVIRONMENTAL

Overall Diameter (approx.)	[7.0 ± 0.3 mm]
Min. Bending Radius (installation)	4 × overall diameter
Max. Pulling Tension	110 N (25 lbf)
Operating Temperature	[-20 °C to +60 °C]
Installation Temperature	[0 °C to +50 °C]
Flame Retardancy	IEC 60332-1

7. ELECTRICAL CHARACTERISTICS (AT 20 °C)

Characteristic Impedance (1–500 MHz)	100 Ω ± 15 Ω
Max. DC Resistance (per conductor)	[≤ 140 Ω/km (14 Ω/100 m)]
Max. DC Resistance Unbalance	5 %
Max. Mutual Capacitance (1 kHz)	5.6 nF/100 m
Max. Capacitance Unbalance (pair to ground)	330 pF/100 m
Max. Propagation Delay (500 MHz)	[≤ 536 ns/100 m]
Nominal Velocity of Propagation (NVP)	[~ 0.64]
Max. Operating Voltage	[72 V]
Dielectric Strength (DC, 1 min)	[1.0 kV]

8. TRANSMISSION PERFORMANCE (PER 100 M)

Frequency (MHz)	Insertion Loss — max (dB)	NEXT — min (dB)
1	2.1	74.3
4	3.8	65.3
10	5.9	59.3
16	7.5	56.2
31.25	10.5	51.9
62.5	15.0	47.4
100	19.1	44.3
250	31.1	38.3
500	45.3	33.8

9. INSTALLATION & HANDLING GUIDELINES

- Do not exceed the max. pulling tension (110 N) or the min. bending radius (4 × OD).
- Avoid kinks, sharp bends, crushing and over-tight cable ties — do not exceed the bend radius to keep crosstalk within limits.
- Keep separation from power cables according to local wiring standards (EN 50174-2 / TIA-569).
- Do not pull the cord by the cable; unplug using the plug body and release the latch first.
- Connect only to Cat6A-rated (or higher) jacks, patch panels and equipment to maintain channel performance.
- Keep the total channel, including all patch cords, within 100 m and test it with a certified cable tester (Category 6A channel).