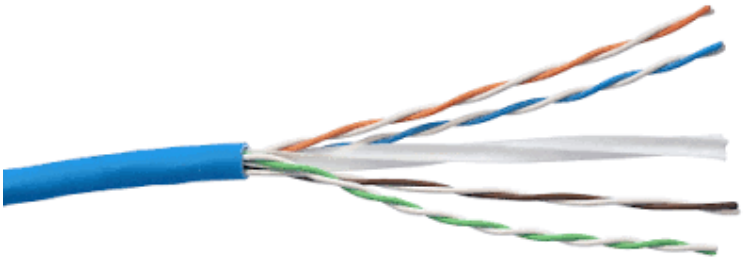
Cat6A U/UTP Ethernet Bulk Cable — LSZH

4 Pairs | 24 AWG Solid Bare Copper | 500 MHz | 305 m (1000 ft) Reel





1. GENERAL DESCRIPTION

Cat6A U/UTP (unshielded) bulk cable is designed for structured cabling and Ethernet networks up to 10GBASE-T (10 Gigabit Ethernet) over the full 100 m channel. It features four twisted pairs of solid pure bare copper conductors with an enlarged cross-web separator and a Low Smoke Zero Halogen (LSZH) jacket. The increased cable diameter and separator design provide the pair spacing needed to meet Category 6A alien-crosstalk limits without a screen, making it suitable for indoor installations in buildings, offices, data rooms and public areas where low smoke and halogen-free emission are required. Supplied on a reel for easy, tangle-free pulling.

2. KEY FEATURES

- Pure bare copper solid conductors for low attenuation and stable long-run performance
- Unshielded (U/UTP) design — simple, fast termination with standard unshielded connectors, no earthing required
- Cross-web separator for improved NEXT and PS NEXT performance
- LSZH jacket: low smoke, zero halogen, reduced toxic and corrosive gas emission in fire
- Supports 10GBASE-T over 100 m and PoE / PoE+ / PoE++ (IEEE 802.3af / at / bt)
- Characterised up to 500 MHz with PS ANEXT performance achieved through separator design and cable diameter
- Supplied on a 305 m reel for smooth, tangle-free pay-out

3. APPLICATIONS

- Horizontal cabling in structured cabling systems (permanent link / channel)
- 10BASE-T, 100BASE-TX, 1000BASE-T and 10GBASE-T Ethernet
- Voice, CCTV / IP cameras, access control, PoE devices
- Data centres, hospitals and industrial areas with high electromagnetic interference
- Offices, hospitals, schools and public buildings requiring 10 Gigabit performance

4. APPLICABLE STANDARDS

- ANSI/TIA-568.2-D — Category 6A balanced twisted-pair cable
- ISO/IEC 11801 and IEC 61156-5 — Class EA generic cabling
- 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	Solid pure bare copper, 24 AWG (Ø 0.57 mm nominal)
Insulation	Solid HDPE (high-density polyethylene)
Pairs	4 twisted pairs, different twist lengths to minimise crosstalk
Pair Colour Code	Blue / White-Blue, Orange / White-Orange, Green / White-Green, Brown / White-Brown
Screening	None (U/UTP — unshielded)
Separator / Ripcord	Enlarged cross-web filler (X-spline) / [Yes / No]
Outer Jacket	LSZH (Low Smoke Zero Halogen) — colour: [Grey / Blue / White]
Marking	CAT6A U/UTP 4P 24AWG LSZH [standard] [metre marking]
Packing	305 m (1000 ft) on reel / pull box

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.)	[8.2 ± 0.4 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)	93.8 Ω/km (9.38 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
Max. Delay Skew	45 ns/100 m
Min. PS ANEXT (100 MHz)	37.0 dB per 100 m [per TIA-568.2-D]

Min. ACR-F / PS ACR-F (100 MHz)	27.8 dB / 24.8 dB per 100 m
Nominal Velocity of Propagation (NVP)	[~ 0.67]
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)	PS NEXT — min (dB)
1	2.1	74.3	72.3
4	3.8	65.3	63.3
10	5.9	59.3	57.3
31.25	10.5	51.9	49.9
62.5	15.0	47.4	45.4
100	19.1	44.3	42.3
250	31.1	38.3	36.3
500	45.3	33.8	31.8

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 — Cat6A performance is sensitive to cable deformation.
- Keep separation from power cables according to local wiring standards (EN 50174-2 / TIA-569).
- Untwist pairs by no more than 13 mm (0.5 in) at termination points.
- Use Cat6A-rated connectors, jacks and patch panels throughout the link.
- Avoid tight bundling and parallel runs with other Cat6A cables over long distances; follow loose-bundle practice to limit alien crosstalk.
- Test every installed link with a certified cable tester (Cat6A permanent link).