Introduction

Category 5 (Cat5) cables are a type of twisted pair cables used in telephone systems for both voice and data transmission and designed for high-speed data transmission in Ethernet networks. They are an improvement over Cat3 cables, offering higher bandwidth and data rates. Cat5 cables are commonly used in residential and commercial networking applications and come in two main types: Unshielded Twisted Pair (UTP) and Shielded Twisted Pair (STP). The shielded variant is used in environments with significant electromagnetic interference (EMI) or radio frequency interference (RFI).

Application

UTP Cat5:
Data Transmission: Widely used for 10Base-T, 100Base-T (Fast Ethernet), and some low-speed Gigabit Ethernet applications.
Voice and Video: Suitable for voice, data, and video transmission in residential and commercial settings.
STP Cat5:
High-Interference Environments: Used in areas with significant electromagnetic interference (EMI) or radio frequency interference (RFI).
Industrial Settings: Suitable for installations where electrical noise is prevalent.
High-Performance Data Transmission: Ideal for environments requiring minimal interference and enhanced data integrity.

Construction

Conductors: Typically 24 AWG solid or stranded copper wires.
Insulation: Each conductor is insulated with polyethylene or PVC.
Twisting: Pairs of wires are tightly twisted together to reduce crosstalk and electromagnetic interference (EMI).
Sheathing: Outer jacket made from PVC or low-smoke zero halogen (LSZH) for fire safety.
Unshielded (UTP): No additional shielding around the pairs or the cable.
Shielded (STP): Each pair or the overall cable is shielded with a metallic foil or braid to protect against EMI and RFI.

Advantages

UTP Cat5:
Cost-Effective: Inexpensive and widely available.
Ease of Installation: Flexible and easy to work with.
High Data Rates: Supports faster Ethernet speeds compared to Cat3.
STP Cat5:
Improved EMI Protection: Provides better protection against electromagnetic and radio frequency interference.
Enhanced Signal Integrity: Reduces signal degradation in noisy environments.
Industrial Use: Ideal for areas with high levels of interference, such as factories or near heavy machinery.

Performance

Max Data Rate: Supports up to 100 Mbps for Fast Ethernet and some low-speed Gigabit Ethernet applications.
Bandwidth: Up to 100 MHz.
Distance: Suitable for distances up to 100 meters for data transmission.
EMI Protection:
UTP Cat5: Low, due to the lack of shielding.
STP Cat5: High, due to the presence of shielding.

Specification

-TIA/EIA-568: Telecommunications cabling standards.
-ISO/IEC 11801: International standard for structured cabling.

Eastful Cable Lab

We have CNAS Accredited Facility to assure conformity assessment services with a focus on quality, expertise, and customer satisfaction.
CNAS has international mutual recognition among IAF, ILAC, APLAC and PAC.

Accreditation

We meet the requirements of ISO9001, ISO14001, ISO45001 and ISO50001 and our cables have certificate of CCC, RoHS, CASC, UL, cUL, TÜV Rhineland and CCS.

National Green Factory

Our facility has been awarded of National Green Factory by Ministry of Industry and Information Technology of China.
We are committed to the development of high-end, intelligent and green manufacturing industry.

*The overall energy consumption level of green factories is better than the energy efficiency benchmark level.

Technical Parameters

Frequency	Attenuation	Return Loss	Pair to Pair	
			NEXT	ELFEXT
MHz	dB/100m	dB/100m	dB/100m	dB/100m
0.77	1.80	NA	70.00	69.00
1	2.00	20.00	68.30	66.80
4	4.00	23.00	59.30	54.70
8	5.80	24.50	54.80	48.70
10	6.50	25.00	53.30	46.80
16	8.20	25.00	50.30	42.90
20	9.20	25.00	48.80	40.70
25	10.40	24.30	47.30	38.80
31.25	11.70	23.60	45.90	36.90
62.5	17.00	21.50	41.40	30.80
100	22.00	20.10	38.30	26.80
155	28.10	18.80	35.50	22.90
200	32.40	18.00	33.80	20.70
300	41.00	16.80	32.30	17.20
350	44.90	16.30	30.20	15.90