

# CAT6 UTP 550MHz CMR & CMP Networking Cables

Quest Category 6 U/UTP cable is designed for indoor high speed Gigabit data and voice applications. It is constructed of 4-pairs of 23AWG unshielded twisted pair copper wires with a flexible High-Density Polyethylene divider which isolates the pairs for minimal cross-talk. In conjunction with this cable, Quest also offers a complete line of UL listed Category 6 structured cabling products which includes Patch Panels, Keystone Jacks, In-line Couplers, Patch Cables Wall Plates and more... (Pages 7-13)

- Ideal for unshielded UTP high-speed Gigabit networks up to Cat6
- Constructed of 4 twisted pairs of 23 AWG bare copper wire
- Flexible high-density polyethylene divider isolates pairs for minimal cross-talk
- Backward compatible to Cat5 & Cat5E
- Designed for indoor use
- Packaged in an EZ-Pull Box
- Flexible jacket with markers every 2 ft. for length of cable



### PVC Riser/CMR



Item #	Color	Description
NBW-1062	BLUE	1000 FT. CAT6 4-PAIR U/UTP 550MHZ 23AWG SOLID CONDUCTOR PVC CMR CABLE
NBW-1068	WHITE	1000 FT. CAT6 4-PAIR U/UTP 550MHZ 23AWG SOLID CONDUCTOR PVC CMR CABLE
NBW-1069	GRAY	1000 FT. CAT6 4-PAIR U/UTP 550MHZ 23AWG SOLID CONDUCTOR PVC CMR CABLE

### Plenum/CMP



Item #	Color	Description
NBW-2062	BLUE	1000 FT. CAT6 4-PAIR U/UTP 550MHZ 23AWG SOLID CONDUCTOR PLENUM CMP CABLE
NBW-2068	WHITE	1000 FT. CAT6 4-PAIR U/UTP 550MHZ 23AWG SOLID CONDUCTOR PLENUM CMP CABLE
NBW-2069	GRAY	1000 FT. CAT6 4-PAIR U/UTP 550MHZ 23AWG SOLID CONDUCTOR PLENUM CMP CABLE

### Scope

This Specification is based on the standards of UL444 , ANSI/TIA-568-C.2 and ISO/IEC11801 and covers the requirements for unshielded twisted pair (UTP) cables of 100Ω , Category 6 (Cat.6). Applicable cable size & type; 4 Pairs, PVC or Plenum sheath (CMR,CMP).

### Suitable Applications

HDBaseT, 10GBaseT, 1000BaseTX, Gigabit Ethernet, 100BaseTX, Fast Ethernet, 100BaseVG ANYLAN, ISDN, 155ATM, 622ATM, VoIP, NTSC/PAL Component or Composite Video, Digital Video, RS-422, as well as for Video Security and HDMI over Cat6.

### Cable Marking

**PVC:** QUEST CABLING SOLUTIONS NBW-106X E466009 (UL) CMR 60°C PVC UTP 4PR 23AWG - ANSI/TIA-568C.2 & ISO/IEC 11801 CAT.6 550MHZ 001FT---999FT ROHS

**PLENUM:** QUEST CABLING SOLUTIONS NBW-206X E466009 (UL) CMP 60°C UTP 4PR 23AWG - ANSI/TIA-568C.2 & ISO/IEC 11801 CAT6 550MHZ 001FT---999FT ROHS

## Cable Construction

### Conductors & Insulation

# of Pairs:	4
AWG:	23
Conductor Material:	Solid Bare Copper
Conductor Diameter:	0.50 mm
Insulation Material:	High-Density Polyethylene or FEP
Insulation Overall Diameter:	CMR: 0.89 mm    CMP: 0.83 mm

### Pair Color Code

Pair 1	Blue* Blue/White Stripe
Pair 2	Orange* Orange/White Stripe
Pair 3	Green* Green/White Stripe
Pair 4	Brown* Brown/White Stripe

### Sheath

Material:	Flame retardant PVC or Plenum
Thickness:	CMR: 0.40 mm    CMP: 0.35 mm
Overall Diameter:	CMR: 6 mm    CMP: 5.80 mm

## Physical Properties

### General

Length:	1000 ft. (305 m)
Weight:	28 lbs.
Storage Temperature Range:	-20°C To 75°C
Installation Temperature Range:	0°C To 60°C
Operating Temperature Range:	-20°C To 60°C
Max. Recommended Pulling Tension:	30 lbs.

### Insulation Tensile Strength & Elongation

HDPE (Un-aged):	16.5MPa and 300%
FEP (Un-aged):	17.2MPa and 200%
Heat-aged:	75% (Respectively)
Min. Bend Radius/Minor Axis:	1.0 in

### Sheath Tensile Strength & Elongation (Respectively)

PVC (Un-aged):	17.24MPa and 100%
Heat-aged:	85% and 50% Min.

## Electrical Performance

Characteristics	Units	Specification
DC Resistance	Ω/100m	≤ 9.38
DC Resistance Unbalance	%	≤ 5.00
Mutual Capacitance	nF/100m	≤ 5.60
Capacitance Unbalance (Ground)	pF/100m	≤ 330
Insulation Resistance	MΩ-100m	≥ 500
Dielectric Strength	DC kV/sec	2.5 / 2
Impedance (Characteristic mean)	Ω	100 ± 15% (1 ≤ f ≤ 550MHz)
Return Loss	dB/100m	≥ 20 + 5 * log(freq) , 1 ≤ f < 10MHz ≥ 25 , 10 ≤ f < 20MHz ≥ 25 - 7 * log(freq/20) , 20 ≤ f ≤ 550MHz
Attenuation (Insertion Loss)	dB/100m	≤ 1.808*√(freq) + 0.017*(freq) + 0.20/√(freq), 1 ~ 550 MHz
NEXT Loss	dB/100m	≥ 44.3 - 15*log(freq/100) , 1 ~ 550MHz
Power sum NEXT Loss	dB/100m	≥ 42.3 - 15*log(freq/100) , 1 ~ 550MHz
ELFEXT Loss	dB/100m	≥ 27.8 - 20*log(freq/100) , 1 ~ 550MHz
Power sum ELFEXT Loss	dB/100m	≥ 24.8 - 20*log(freq/100) , 1 ~ 550MHz
Propagation Delay	ns/100m	≤ 534 + 36 / √(Freq) , 1 ~ 5500MHz
Propagation Delay Skew	ns/100m	≤ 45

Frequency (MHz)	Attenuation (dB/100m) Max.	NEXT (dB/100m) Min.	PSNEXT (dB/100m) Min.	ELFEXT (dB/100m) Min.	PSELFEXT (dB/100m) Min.	RL (dB/100m) Min.	P.Delay (ns/100m) Max.
1	2	74.3	72.3	67.8	64.8	20	570
4	3.8	65.3	63.3	55.8	52.8	23	552
8	5.5	60.8	58.8	49.7	46.7	24.5	547
10	6	59.3	57.3	47.8	44.8	25	545
16	7.6	56.2	54.2	43.7	40.7	25	543
20	8.5	54.8	52.8	41.8	38.8	25	542
25	9.5	53.3	51.3	39.8	36.8	24.3	541
31.25	10.7	51.9	49.9	37.9	34.9	23.6	540
62.5	15.4	47.4	45.4	31.9	28.9	21.5	539
100	19.8	44.3	42.3	27.8	24.8	20.1	538
250	32.8	38.3	36.3	19.8	16.8	17.3	536
550	51.8	33.2	31.2	13	10	14.9	536