1. SCOPE

UL444, ANSI/TIA-568C.2 and ISO/IEC 11801 and covers the requirements for unshielded twisted pair (UTP) cables of 100Ω , enhanced Category 6 (Cat.6).

Applicable cable size & type:
4 Pairs, PVC sheath (CMR)
UV Resistant CMX
Indoor/Outdoor

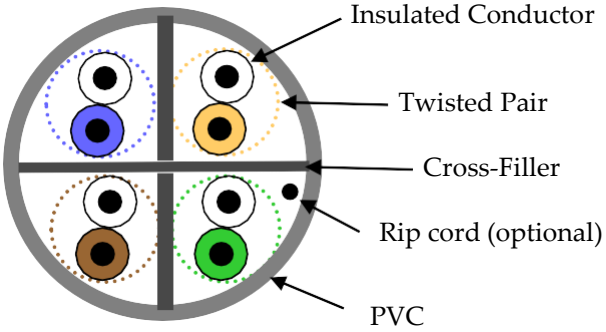

Fig 1. CrossSectional Diagram of Cable

2. CABLE CONSTRUCTION

2.1 Conductor

The conductors shall be 23 AWG solid , annealed and bare copper

2.2 Insulation

Each conductor shall be insulated with solid high density polyethylene.
The insulation shall be uniform and shall not have any defects.
The diameter over the insulation shall be maximum 1.22mm.

2.3 Color code

Pair No	A - wire		B - wire	
	Base	Stripe	Base	Stripe
1	White	Blue	Blue	-
2	White	Orange	Orange	-
3	White	Green	Green	-
4	White	Brown	Brown	-

*Note: The Stripe Marking shall be applied on the white color

2.4 Core Assembly

Two insulated conductors shall be twisted into a pair.
Four twisted pairs shall be assembled into a cable core.

2.5 Sheath

The flame retardant PVC compound colored grey or other colors shall be applied over the cable core. The sheath shall be uniform and shall not have any defects.

Type	Thickness (Nom. mm)	OD (Nom. mm)
CMR	0.45 ± 0.05	6.0 ± 0.2

Part # Legend: (Example: Blue, 1000', Pull Box = **WB6ERBL1BX**)

WB	6E	R	XX	X or XX	XX
WB	Cbl. Type	Rating	Color	Length	Put Up

Rating Legend	
Riser	R

Color Legend	
White	WH
Blue	BL
Yellow	YL

Length Legend	
1000	1

Put Up Legend	
Pull Box	BX

- The drawing appearing on this page may be subject to change or modification without any prior notice -

3. ELECTRICAL CHARACTERISTIC

3.1 Electrical Performance

Characteristics	units	Cat.6
DC Resistance	Ω/100m	≤ 9.38
DC Resistance Unbalance	%	≤ 5.00
Mutual Capacitance	nF/100m	≤ 5.60
Capacitance Unbalance (Pair to 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 ≤ 250MHz)
Return Loss	dB/100m	≥ 20 + 5 * log(freq) , 1 ≤ f < 10MHz ≥ 25 , 10 ≤ f < 20MHz ≥ 25 – 7 * log(freq/20) , 20 ≤ f ≤ 250MHz
Attenuation (Insertion Loss)	dB/100m	≤ 1.808*√(freq) + 0.017*(freq) + 0.20/√(freq) , 1 ~ 250 MHz
NEXT Loss	dB/100m	≥ 44.3 – 15*log(freq/100) , 1 ~ 250MHz
Power sum NEXT Loss	dB/100m	≥ 42.3 – 15*log(freq/100) , 1 ~ 250MHz
ELFEXT Loss	dB/100m	≥ 27.8 – 20*log(freq/100) , 1 ~ 250MHz
Power sum ELFEXT Loss	dB/100m	≥ 24.8 – 20*log(freq/100) , 1 ~ 250MHz
Propagation Delay	ns/100m	≤ 534 + 36 / √(Freq) , 1 ~ 250MHz
Propagation Delay Skew	ns/100m	≤ 45

Frequency MHz	Attenuation (dB/100m)	Near End Cross Talk (dB)	ACR (dB/100m) Min	Power Sum (dB)			ELFEXT (dB/100m) Min	RL (dB) Min
				NEXT Min	ELFEXT Min	ACR Min		
1.0	2.0	74.3	72.3	72.3	64.8	70.3	67.8	20.0
4.0	3.8	65.3	61.5	63.3	52.8	59.5	55.8	23.0
8.0	5.3	60.8	55.4	58.8	46.7	53.4	49.7	24.5
10.0	6.0	59.3	53.3	57.3	44.8	51.3	47.8	25.0
16.0	7.6	56.2	48.7	54.2	40.7	46.7	43.7	25.0
20.0	8.5	54.8	46.3	52.8	38.8	44.3	41.8	25.0
25.0	9.5	53.3	43.8	51.3	36.8	41.8	39.8	24.3
31.25	10.7	51.9	41.2	49.9	34.9	39.2	37.9	23.6
62.5	15.4	47.4	32.0	45.4	28.9	30.0	31.9	21.5
100.0	19.8	44.3	24.5	42.3	24.8	22.5	27.8	20.1
155.0	25.2	41.4	16.2	39.4	21.0	14.2	24.0	18.8
200.0	29.0	39.8	10.7	37.8	18.8	8.7	21.8	18.0
250.0	32.8	38.3	5.4	36.3	16.8	3.4	19.8	17.3
350.0	39.7	37.1	-3.6	34.1	13.9	-5.6	16.9	NS
400	42.9	36.3	-7.6	33.3	12.7	-9.6	15.8	NS
550	51.4	36.2	---	34.2	10.9	---	14.0	NS