

## PBNcable Category 6 UTP LSZH

- Complies to all Category 6 cable standards
- Supports Class E applications
- Central cross member maintains geometry and performance
- Tested up to 250MHz

### GENERAL

This specification details the construction of **Category 6** network cable. The conductors are solid copper, covered with a solid plastic insulating compound. The insulated conductors (four twisted pairs) are inside cable core. The cable structure is completed with LSZH jacket .The cable is fully color coded so that each insulated conductor in the cable is distinguishable from other insulated conductor. Cat-6 cable supports frequencies up to 250 MHz .

**Applications:** PBN cables cat-6 UTP cable is intended for high speed data applications including:

- IEEE 802.3 , 1000BASE-T, 100BASE-TX, 10BASE-T
- ANSI X3.263 100 Mb/s
- 1000BASE-TX (ANSI/TIA/EIA-854-2001) 100baseTX Fast Ethernet



### TEMPERATURE AND ENVIRONMENT

The cables shall without detriment, perform suitably throughout a temperature range of -40 to +70 C.



### CONDUCTOR

Each conductor is a solid wire of commercially pure annealed copper, smoothly drawn, circular in cross section, uniform in quality and free from defects. Conductors meet the quality requirements of ASTM B3. The maximum resistance for a cross section area of 1 mm<sup>2</sup> and a length of 1 km is 17.241 ohms when measured at 20±2 °C.

The nominal conductor diameters may be 0.57mm (23 AWG).

### TWISTING

Two appropriately colored insulated conductors are uniformly twisted together to form a pair. The lays of all pairs are in the same direction and different for each pair in a unit

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### CONDUCTOR INSULATION

Each conductor is uniformly covered with solid polyethylene conforming to ASTM D-1248. Type III class A category 4 or 5 Grade E8. Insulation contains a suitable antioxidant system including a copper inhibitor. The insulation will be uniform, smooth and have non-porous surface

Insulation Thickness (mm)	Insulation Diameter(mm)	Cable Diameter (mm)	Insulation Material
<b>0.24</b>	<b>1.05</b>	<b>0.636</b>	<b>HDPE</b>

The insulation colors are in accordance with the following table (1).

**Table 1**

Number Pairs	Color Coded
1	White – Blue / Blue
2	White – Orange / Orange
3	White – Green / Green
4	White – Br-own / Brown

### RIP CORD

The rip cords will be placed over the core under the jacket and must be strong and flexible enough to be able to strip or the jackets easily.

### JACKET

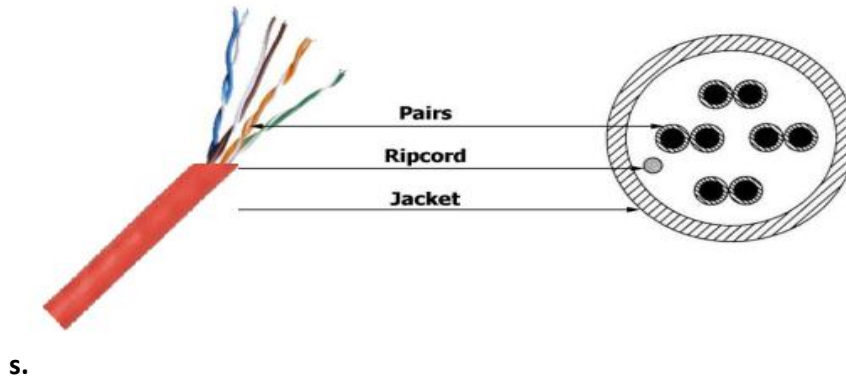
A Low smoke zero halogen jacket in accordance with Low smoke zero halogen (LSZH) conforming to DIN VDE 0207 part 4 designating Y13. The nominal jacket thickness will be 0.5mm for all cables. The outer jacket color is grey or white (or other color as request).

### IDENTIFICATION MARKING

Each length of the cable shall be permanently identified as to the manufacturer, year of manufacture and cable type. The marking will be printed on the outer jacket.

## CABLE FORMATION

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**Cable ID: TEST PBN-002**

**Test Summary: PASS**

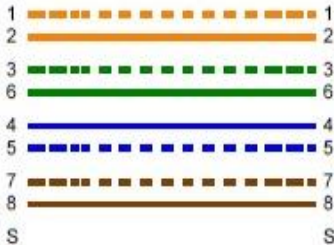
Date / Time: 07/17/2018 03:51:18pm  
Headroom: 4.0 dB (RL 12)  
Test Limit: TIA Cat 6 Channel  
Cable Type: Cat 6 UTP

Operator: MRS AHAN1  
Software Version: 2.4100  
Limits Version: 1.6000  
NVP: 69.0%

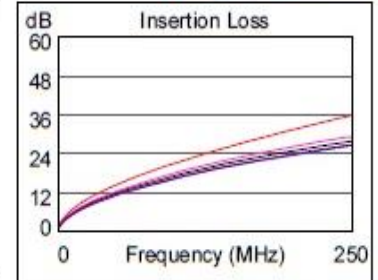
Model: DTX-1800  
Main S/N: 9419079  
Remote S/N: 9419080  
Main Adapter: DTX-CHA001  
Remote Adapter: DTX-CHA001

Wire Map (T568B)

**PASS**

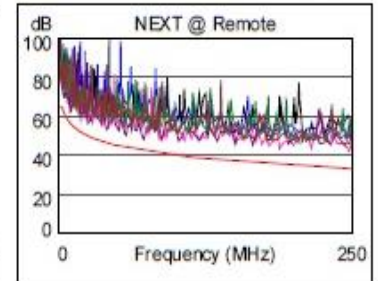
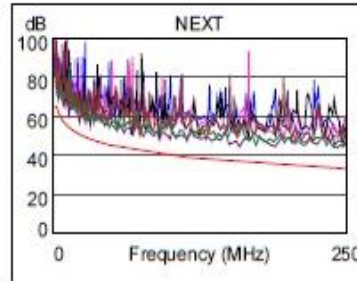


Length (ft), Limit 328	[Pair 12]	295
Prop. Delay (ns), Limit 555		460
Delay Skew (ns), Limit 50		25
Resistance (ohms)	[Pair 12]	14.5
Insertion Loss Margin (dB)	[Pair 36]	6.6
Frequency (MHz)	[Pair 36]	249.0
Limit (dB)	[Pair 36]	35.9

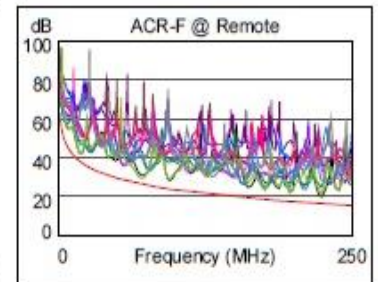
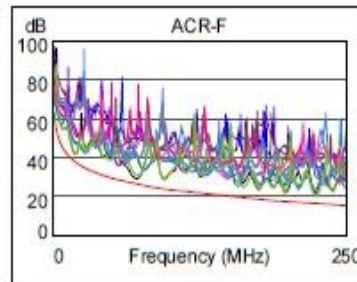


Worst Case Margin Worst Case Value

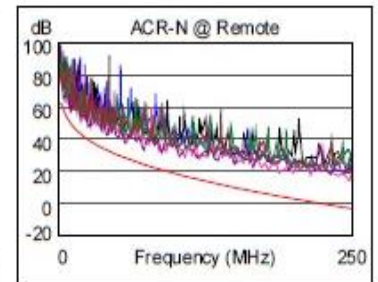
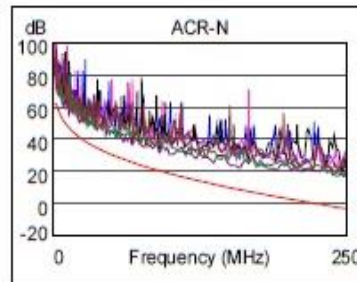
<b>PASS</b>	MAIN	SR	MAIN	SR
Worst Pair	36-45	36-45	36-78	12-45
NEXT (dB)	6.3	5.6	10.4	8.9
Freq. (MHz)	22.5	10.3	241.5	248.0
Limit (dB)	50.8	56.4	33.4	33.2
Worst Pair	45	45	36	45
PS NEXT (dB)	7.6	6.6	10.9	10.1
Freq. (MHz)	4.3	4.4	241.0	247.5
Limit (dB)	60.1	59.9	30.4	30.2



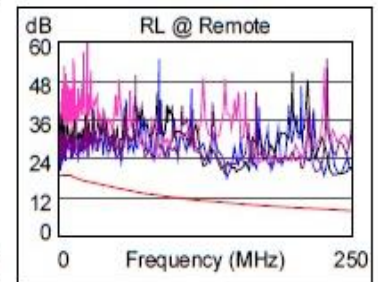
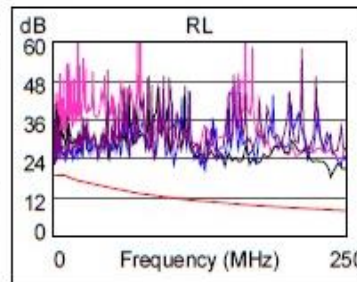
<b>PASS</b>	MAIN	SR	MAIN	SR
Worst Pair	12-78	78-12	78-12	12-78
ACR-F (dB)	2.8	2.9	3.5	3.3
Freq. (MHz)	69.8	70.8	223.5	223.5
Limit (dB)	26.4	26.3	16.3	16.3
Worst Pair	78	12	12	78
PS ACR-F (dB)	5.5	5.6	6.3	6.4
Freq. (MHz)	69.8	69.8	224.0	223.5
Limit (dB)	23.4	23.4	13.3	13.3



<b>N/A</b>	MAIN	SR	MAIN	SR
Worst Pair	36-45	36-45	36-45	12-45
ACR-N (dB)	7.8	6.8	19.6	16.9
Freq. (MHz)	4.3	10.3	247.5	248.0
Limit (dB)	58.5	50.0	-2.5	-2.6
Worst Pair	45	45	36	45
PS ACR-N (dB)	8.4	7.4	17.8	18.0
Freq. (MHz)	4.3	4.4	247.5	247.5
Limit (dB)	56.0	55.7	-5.5	-5.5



<b>PASS</b>	MAIN	SR	MAIN	SR
Worst Pair	12	12	45	12
RL (dB)	4.4	4.0	9.7	7.7
Freq. (MHz)	11.1	3.9	237.5	143.5
Limit (dB)	18.8	19.0	8.2	10.4



Compliant Network Standards:

10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	