

PFC

PERSIAN FIBER COMMUNICATION CO.
TECHNICAL SPECIFICATION FOR DATA CABLE

CAT6

UTP LSZH

SALE ENGINEERING DEPARTMENT
CODE:102043



WWW.PFCCO.NET

SPECIFICATION FOR DATA CABLE

CAT6

UTP LSZH

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1- 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 .

2- ASSOCIATED DOCUMENTS

This specification is in accordance with REA'ASTM (American society for testing and material), BS (British Standard Institute), IP (Institute of Petroleum), ISO (International Organization for Standardization) and TIA/EIA 568C2 has been specified.

3- TEMPERATURE AND ENVIRONMENT

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

4- 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 mm² and a length of 1 km is 17.241 ohms when measured at 20±2 °C.

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

5- 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.

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 – Brown / Brown

6- 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.

7- 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.

8- OUTER JACKET

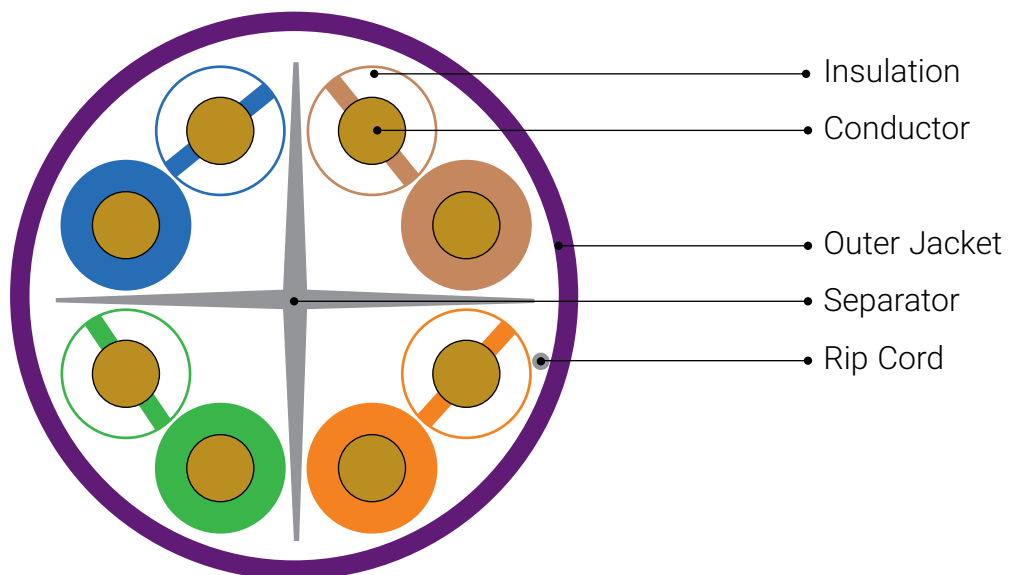
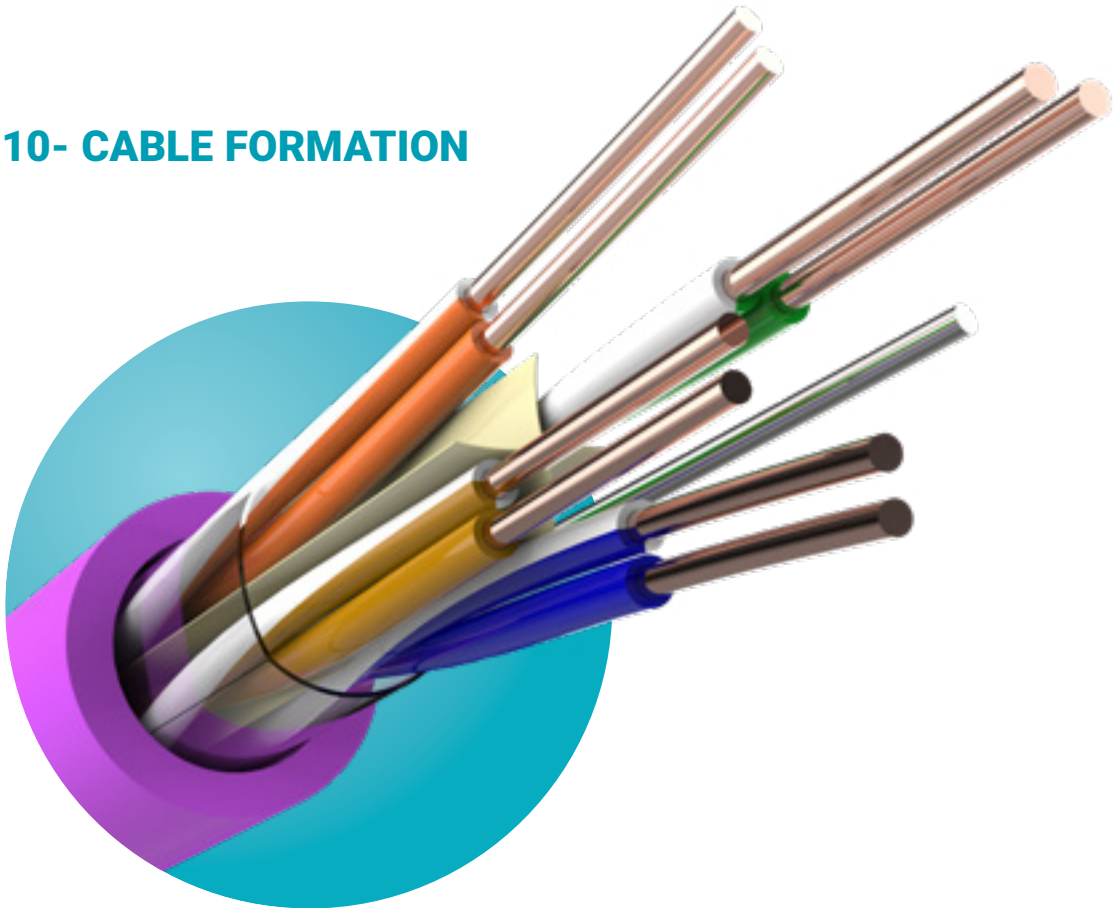
A LSZH compound will be applied on the cable core. The nominal jacket thickness will be 0.55mm.

9- IDENTIFICATION MARKING

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



10- CABLE FORMATION



11 – ELECTRICAL PARAMETERS

Freq.	Attenuation Max	Return Loss Min	NEXT Min	PS. NEXT Min	PS. ACR Min	PS. ELFEXT Min	ELFEXT Min
MHz	dB/100m	dB	dB	dB	dB	dB/100m	dB/100m
1	2.0	20.0	76.3	74.3	72.3	64.8	67.8
4	3.8	23.0	67.3	65.3	61.5	52.7	55.7
8	5.3	24.5	62.8	60.8	55.5	46.7	49.7
10	6.0	25.0	61.3	59.3	53.3	44.8	47.8
16	7.6	25.0	58.3	56.3	48.7	40.7	43.7
20	8.5	25.0	56.8	54.8	46.3	38.7	41.7
25	9.5	24.3	55.3	53.3	43.8	36.8	39.8
31.25	10.7	23.6	53.9	51.9	41.2	34.9	37.9
62.5	15.4	21.5	49.4	47.4	32.0	28.8	31.8
100	8.9	10.1	3.1	5.6	7.1	20.7	20.5
250	2.5	4.4	5.3	7	5.5	8.1	17

* All data in table are ideal and the real test results may deviate from the above table.



12 – TOTAL SPECIFICATION

Product Type		
Product Code	102043	
Shielding Type	Unshielded (U/UTP)	
Reference Standard	ISO/IEC 11801, ANSI/TIA-568-C.2	
Cable Length	305±1.5	
Conductor		
Conductor Type	Solid Oxygen-free Copper Pure 99.98%	
Wire Gauge (AWG)	23	
Conductor Qty.	4 Twisted Pairs	
Insulation		
Insulation Material	Polyethylene(HDPE)	
Insulation Diameter (mm)	0.92 ± 0.05	
Structure		
Aluminum Foil	No	
Shield Braid	No	
Sheath		
Material	LSZH (Complies RoHS)	
Thickness (mm)	0.55 ± 0.05	
Outer O.D. (mm)	6 ± 0.4	
Color	Violet (indoor)	
Electrical Characteristics (20°C)		
Distance	Max 90 Meter	Max 55 Meter
Data Rate Support	10/100/1000Base-T	10GB Base-T
Standard Bandwidth (MHz)	250	250 - 350
Reference Bandwidth (MHz)	550	550
1-250MHz, Characteristic Impedance (Ω)	100 ± 15	100 ± 15
Mechanical Characteristics		
Before Aging Tensile Strength (Mpa)	≥13.5	
Before Aging Elongation (%)	≥150	
After Aging Tensile Strength (Mpa)	≥12.5	
After Aging Elongation (%)	≥125	
Surface Printing		
Marker Height (mm)	3.0 ± 0.3	
Distance Marker(m)	1	
Color	Black	
Others		
Rip Cord	Yes	
Drain Wire	No	
Separator	Yes	
Packaging	Carton	

13- FLUKE TEST

This test is a random from 40000 meter cable process production



Cable ID: PFC/6UTP-PER

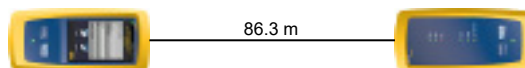
Date / Time: 06/09/2019 12:25:25
 Headroom 5.3 dB (NEXT 36-45)
 Test Limit: TIA Cat 6 Perm. Link
 Cable Type: Cat 6 U/UTP
 NVP: 69.0%

Software Version: V6.1 Build 3
 Limits Version: V7.1
 Calibration Start Date:
 Main (Module): 12/14/2017
 Remote (Module): 12/14/2017

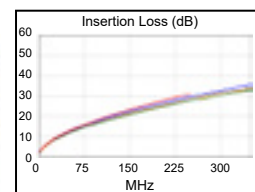
Test Summary: PASS

Model: DSX-8000
 Main S/N: 1719046
 Remote S/N: 1719045
 Main Adapter: DSX-PLA804
 Remote Adapter: DSX-PLA804

Length (m), Limit 90.0	[Pair 78]	86.3
Prop. Delay (ns), Limit 498	[Pair 45]	436
Delay Skew (ns), Limit 44	[Pair 45]	19
Resistance (ohms)	[Pair 45]	13.38
Insertion Loss Margin (dB)	[Pair 45]	1.4
Frequency (MHz)	[Pair 45]	250.0
Limit (dB)	[Pair 45]	31.1

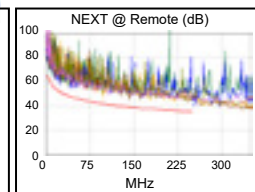
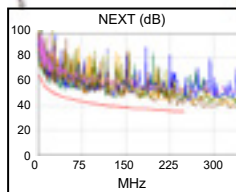


Wire Map (T568B)
PASS

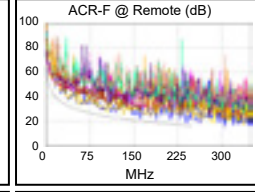
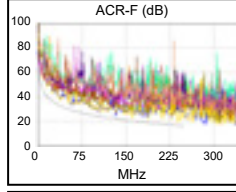


Worst Case Margin Worst Case Value

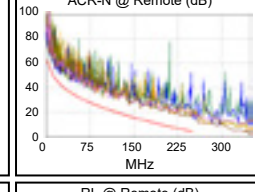
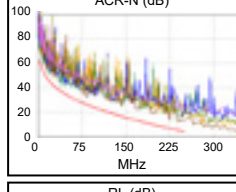
PASS	MAIN	SR	MAIN	SR
Worst Pair	36-45	12-78	36-45	36-45
NEXT (dB)	5.3	6.2	5.3	7.8
Freq. (MHz)	239.0	22.5	239.0	244.0
Limit (dB)	35.7	52.3	35.7	35.5
Worst Pair	36	12	36	78
PS NEXT (dB)	6.8	7.1	6.9	8.2
Freq. (MHz)	237.0	9.4	246.5	250.0
Limit (dB)	33.1	55.9	32.8	32.7



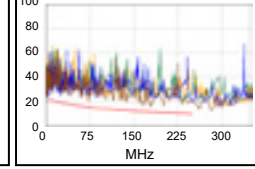
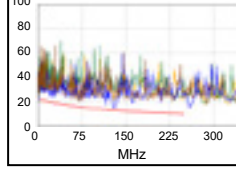
PASS	MAIN	SR	MAIN	SR
Worst Pair	12-78	12-78	78-12	12-78
ACR-F (dB)	2.8	2.5	3.2	2.5
Freq. (MHz)	104.0	240.0	240.0	240.0
Limit (dB)	23.8	16.6	16.6	16.6
Worst Pair	12	78	12	78
PS ACR-F (dB)	5.6	5.4	6.0	5.4
Freq. (MHz)	161.5	240.0	240.0	240.0
Limit (dB)	17.0	13.6	13.6	13.6



N/A	MAIN	SR	MAIN	SR
Worst Pair	12-45	12-45	36-45	36-45
ACR-N (dB)	5.5	6.4	7.5	9.4
Freq. (MHz)	18.5	9.4	247.0	244.0
Limit (dB)	46.0	52.9	4.5	4.8
Worst Pair	45	12	45	78
PS ACR-N (dB)	7.0	7.4	8.6	10.8
Freq. (MHz)	18.4	9.4	247.0	250.0
Limit (dB)	43.7	50.6	1.9	1.6



PASS	MAIN	SR	MAIN	SR
Worst Pair	45	78	45	78
RL (dB)	1.8	4.4	1.8	4.4
Freq. (MHz)	131.0	179.5	131.0	179.5
Limit (dB)	12.8	11.5	12.8	11.5



Compliant Network Standards:
 10BASE-T 100BASE-TX 100BASE-T4
 1000BASE-T 2.5GBASE-T 5GBASE-T
 ATM-25 ATM-51 ATM-155
 100VG-AnyLan TR-4 TR-16 Active
 TR-16 Passive

LinkWare™ PC Version 10.1

Project: PARSIAN_MAJLES

PARSIAN_MAJLES.flw





شرکت پارسیان فیبر ارتباط

آدرس دفتر مرکزی: تهران
ضلع شمالی بزرگراه رسالت
نرسیده به خیابان استاد حسن بنا
پلاک-۱۱۴۷ کد پستی: ۱۶۷۱۶۱۷۸۱۳
شماره تماس ملی: ۱۵۲۸
تلفن فروش: ۰۲۱.۷۲۹۷۸۰۰۰