D-Link® CORPORATION

NCB-C6UYELF1-3

3M Category 6 UTP Flat Patch Cords
Specification

Doc. Version: 1.01
2010/09/30

Date	Version	Description
2010/04/13	1.0	Initial (Dennis Yu)
2010/09/30	1.01	Add Conductor OD 、Insulation Material/OD/Average Thickness and Jacket Material/OD/Average Thickness Modify Heat-resistant Remove Temperature range Add Technical Details

1 Introduction

Overview

This standard in emphasized in the D-Link product development design should request in view of in the Ethernet cable and the attention item, to consistent the standard of material specification in selected.

Scope

All D-Link developed or outsourcing product request to follow the standard.

Acronym

The acronyms are contains to this document.

Acronym	Definition
UTP	Unshielded twisted pair
AWG	American wire gauge
BC	Bare Copper
CCA	Copper clad aluminum wire
CCAM	Copper clad aluminum magnesium wire
CCS	Copper clad steel wire
8P	Eight pin Position in modular connector
8C	Eight real pin Contact in modular connector
4C	Four real pin Contact in modular connector
VW-1	Vertical Wire Flame test by UL
FT-1	Flame Test 1, vertical flame test by CSA
SR	Strain Relief
TR-068	Technical Report 068; A standard which provided by Broadband Forum

2 Twisted Pair Specification

2.1 Cable

Category 6 UTP Flat Patch cable

Conductor: 32 AWG (7/0.09 ±0.007mm), Multi-cores, see picture 2.1-1.

Conductor Metal: Bare Copper

Insulation Material: HD-PE

OD: 0.55 ±0.05mm

Average Thickness:0.10mm

Jacket hardness: 55P (84A ± 3A, Shore)

Material: PVC UL94V-0

OD: 1.4*8mm ±0.2

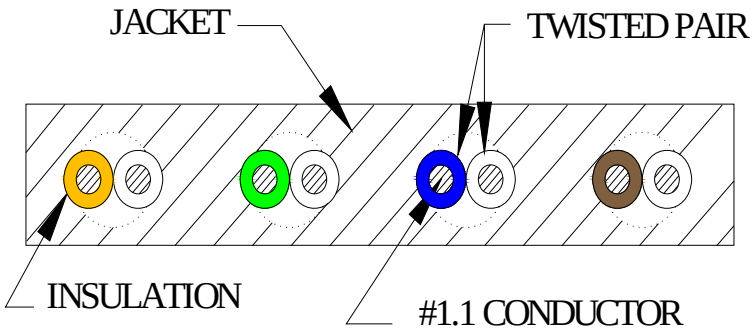
Average Thickness:0.10mm

Color: Yellow 116C

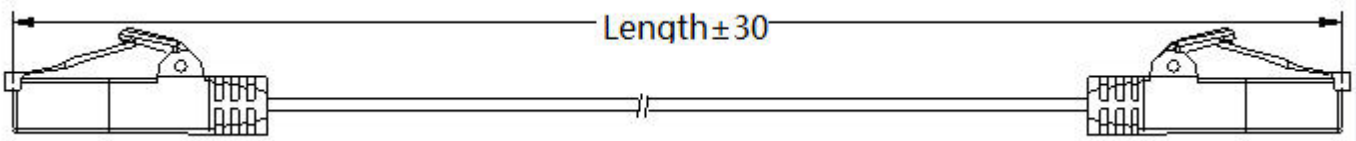
Length type: 3000mm ± 30mm see picture 2.1-2.

Heat-resistant: 75°C minimum (Temperature limited)

Flame property: The purpose of the vertical flame test is to screen out flammable wires. That follow to VW-1 (UL); FT-1 (CSA), either.



Picture 2.1-1_Profile of Cat 6 Cable



Picture 2.1-2_Length Dimension of Cat 6

2.2 Modular Connector/ Plug

RJ-45 8P for Transparence color, see picture 2.2-1.

Gold plated: 30U”

Contact blade: Phosphor Bronze

Dielectric withstanding voltage: 500V AC

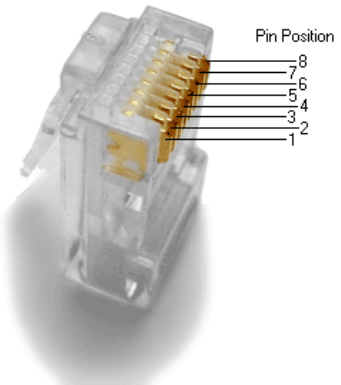
Insulation resistance: 35M Ohm (max.)

Durability: 750 matching cycles

Cable-to-plug tensile strength: 20lbs (89N) (min.)

UL applications: 250V AC, 2A (max.)

Polycarbonate (PC) UL94-V-0



Picture 2.2-1_A Modular Connector

2.3 Technical Details

Mutual Capacitance: 5.6nF/100m nominal

Characteristic Impedance: 100Ω±15%,1-600MHz

Nominal Velocity of Propagation: 69%

Operating Temperature: -20℃-60℃(-4℉-140℉)

Storage Temperature: -20℃-80℃(-4℉-176℉)

2.4 Approval/ Certification

UL 444 (for Copper conductor)

UL 758/ Style 2835 (for Copper, CCA, CCAM & CCS conductors)

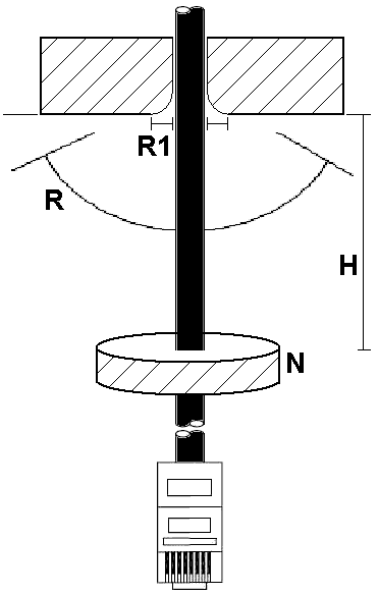
UL 1581 (Test standard)

TIA/EIA-568B.2 (Test standard).

FCC Part 68.500 or IEC 60603-7-4 (for Modular connector)

D-Link Product Hazardous Substance Management.

2.5 Electrical/ Reliability Test

No	Test Item	Standards	Condition	Note
1	Fluke test	a. TIA or ISO Cat. 6 channel b. POE 2-Pair Cat.6 channel	Room temp: 25°C ±3°C Sample size: each set	In production test process
2	Hi-Pot test	D-Link spec.	Room temp: 25°C ±3°C Sample size: each set 300VDC/ 0.05sec	In production test process
3	Swing test	D-Link spec. To run 1000 times with on going electrical & function test	Room temp: 25°C ±3°C Sample size: 5 sets Load(N): 300g Bend Angle(R): +/-60° (水平角度) Clamp Angle(R1): <20° (弧形角度) Load Height(H): The distance between clamp and load is 300mm Speed: 20 times/ minute	
4	Insert test	D-Link spec. To run 800 times, after electrical & function test	Room temp: 25°C ±3°C Sample size: 5 sets Speed: 3~4 times/ minute	Keep appearance completed without any damage

2.6 Package

Marking: The marking consists with “Appliance Wiring Material (AWM) marking requirements”.

To reference some contents:

a. Cable type

b. AWG number

c. Heat-resistant (Operating temperature)

d. UL certificated number

e. UL factory certificated number

f. TIA/EIA-568B.2

g. Cat.6 UTP Path Cable

h. Flame property

i. Others…

Cable bind with circle including white rope tied

Blister+ paper card

Sheath included

2.7 Application

10BASE-T, 100BASE-TX Fast Ethernet, 1000BASE-T (IEEE802.3)

100VG-AnyLAN (IEEE802.12)

550 MHz Broadband Video

Voice, T1, ISDN

155/ 622 Mbps ATM

Power over Ethernet (POE)