



5e LAN™ PowerSum

25 Pair #24 AWG UTP CAT 5e Cable

U.S. PATENT # 5821466 & 5424491

PLENUM PART # M58142

NON-PLENUM PART # M58141

DESCRIPTION

UNSHIELDED TWISTED PAIR (UTP) CATEGORY 5e CABLE FOR USE IN BACKBONE CABLING SYSTEMS AS DESCRIBED IN ANSI/TIA/EIA 568-B. THE CABLE CONSISTS OF #24 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO 25 TIGHTLY TWISTED PAIRS, WITH A RIPCORD, UNDER AN OVERALL JACKET.

THE PLENUM RATED CABLE IS FOR USE IN AIR HANDLING DUCTS AND SPACES IN ACCORDANCE WITH ARTICLE 800 OF THE NATIONAL ELECTRICAL CODE (NEC). THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING NFPA 262 (UL 910 - STEINER TUNNEL) TEST.

THE RISER (NON-PLENUM) RATED CABLE IS FOR USE AS A VERTICAL RUN IN A SHAFT AND FOR GENERAL PURPOSE COMMUNICATIONS USE IN ACCORDANCE WITH ARTICLE 800 OF THE NEC. THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING THE UL 1666 RISER CABLE FLAMMABILITY TEST. THE CABLE ALSO PASSES THE CSA FT4 VERTICAL FLAME TEST - CABLES IN CABLE TROUGH FROM CLAUSE 4.11.4 OF CSA C22.2 NO. 0.3.

THESE CABLES COMPLY WITH THE EU-ROHS DIRECTIVE 2002/95/EC (RESTRICTIONS ON HAZARDOUS SUBSTANCES) REGULATIONS.

SUPPORTED APPLICATIONS

IEEE 802.3 10BASE-T (ETHERNET), 100BASE-T (FAST ETHERNET), AND 1000BASE-T (GIGABIT ETHERNET), ANSI.X3.263 FDDI TP-PMD, IEEE 802.5 4 AND 16 Mbps TOKEN RING, ATM UP TO 155 Mbps, 550 MHz BROADBAND VIDEO AND STANDARDS UNDER DEVELOPMENT SUCH AS ATM AT 622 Mbps.

CONSTRUCTION

PRIMARIES: CONDUCTOR: 24 AWG (.5 mm) SOLID BARE COPPER
INSULATION:
PL – FEP
NP – FLAME RETARDANT POLYOLEFIN

PAIR ASSEMBLY: 2 PRIMARIES TWISTED IN VARIED LAYS

COLOR CODE: SEE TABLE 1

CABLE ASSEMBLY: 25 PAIRS CABLES TOGETHER WITH FILLERS

JACKET: PL – GRAY FEP
NOMINAL OD: .430" (10.92 mm)

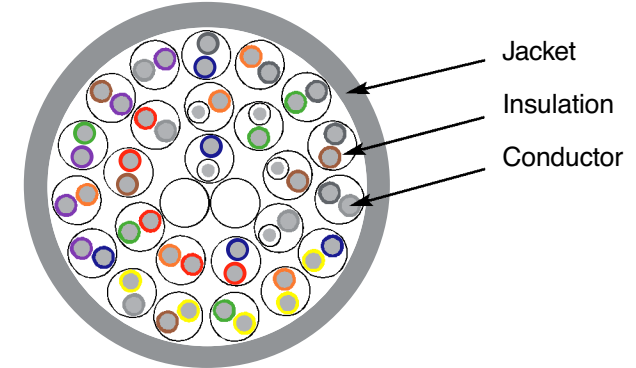
NP – LT. GRAY NO LEAD FLAME
RETARDANT THERMOPLASTIC
NOMINAL OD: .470" (11.94 mm)

LISTING: PL – UL/cUL TYPE CMP
NP – UL/cUL TYPE CMR
ETL VERIFIED TO TIA/EIA CAT 5e BACKBONE

PHYSICAL CHARACTERISTICS

CABLE WEIGHT: PL – 137 lbs/1000ft (204 kg/km)
NP – 119 lbs/1000ft (177 kg/km)

BENDING RADIUS: PL – 4.3" (109 mm) MIN (10 x CABLE OD)
NP – 4.7" (119 mm) MIN (10 x CABLE OD)



PAIR NUMBER	PAIR COLOR CODE	
	Color 1	Color 2
1	WHITE-BLUE	BLUE-WHITE
2	WHITE-ORANGE	ORANGE-WHITE
3	WHITE-GREEN	GREEN-WHITE
4	WHITE-BROWN	BROWN-WHITE
5	WHITE-GRAY	GRAY-WHITE
6	RED-BLUE	BLUE-RED
7	RED-ORANGE	ORANGE-RED
8	RED-GREEN	GREEN-RED
9	RED-BROWN	BROWN-RED
10	RED-GRAY	GRAY-RED
11	BLACK-BLUE	BLUE-BLACK
12	BLACK-ORANGE	ORANGE-BLACK
13	BLACK-GREEN	GREEN-BLACK
14	BLACK-BROWN	BROWN-BLACK
15	BLACK-GRAY	GRAY-BLACK
16	YELLOW-BLUE	BLUE-YELLOW
17	YELLOW-ORANGE	ORANGE-YELLOW
18	YELLOW-GREEN	GREEN-YELLOW
19	YELLOW-BROWN	BROWN-YELLOW
20	YELLOW-GRAY	GRAY-YELLOW
21	PURPLE-BLUE	BLUE-PURPLE
22	PURPLE-ORANGE	ORANGE-PURPLE
23	PURPLE-GREEN	GREEN-PURPLE
24	PURPLE-BROWN	BROWN-PURPLE
25	PURPLE-GRAY	GRAY-PURPLE

PULLING TENSION: 150 lbf (660N) MAX

OPERATING TEMPERATURE: -20°C to +60°C (-4°F to +140°F)

PL = PLENUM
NP = NON-PLENUM

MOHAWK
Cabling Excellence for Open Architecture



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ELECTRICAL CHARACTERISTICS (SEE TABLE 2)

STANDARDS: TIA/EIA 568-B.2 CAT 5e BACKBONE CABLE

CONDUCTOR DCR: 9.38 Ω/100m (28.6 Ω/Mft) MAX

CAPACITANCE: 46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE

PAIR/GROUND: 330 pF/100m (1000 pF/Mft) MAX

CHARACTERISTIC

IMPEDANCE: 100 Ω ± 15% (1-100 MHz)

RETURN LOSS (RL): 20 + 5 log₁₀ (f) dB MIN (1-10 MHz)
25 dB MIN (>10-20 MHz)
25 - 7 log₁₀ (f/20) dB MIN (>20 MHz)

INSERTION LOSS: $1.967\sqrt{f} + .023f + \frac{.050}{\sqrt{f}}$ dB/100m MAX

POWER SUM NEAR END CROSSTALK

(PS-NEXT): 32.3 - 15 log₁₀ (f/100) dB/100m MIN

POWER SUM EQUAL LEVEL FAR END

CROSSTALK (PS-ELFEXT):

20.8 - 20 log₁₀ (f/100) dB/100m MIN

PROPAGATION DELAY: 534 + 36/√f ns/100m MAX

DELTA DELAY (SKEW): 45 ns/100m MAX

NOMINAL VELOCITY OF 72% PLENUM

PROPAGATION (NVP): 68% NON-PLENUM

WHERE f = FREQUENCY IN MHz from .772 to 100 MHz

TABLE 2
REFERENCE ELECTRICAL CHARACTERISTICS

FREQ (MHz)	INSERTION LOSS			PS-NEXT		PS-ACR*	PS-ELFEXT	RL
	avg (dB/100m)	max (dB/100m)	max (dB/1000ft)	avg (dB/100m)	min (dB/100m)	min (dB/100m)	min (dB/100m)	min (dB)
.772	1.5	1.8	5.5	70	64.0	62.2	-	-
1.0	1.9	2.0	6.3	68	62.3	60.3	60.8	20.0
4.0	3.8	4.1	13	57	53.3	49.2	48.7	23.0
8.0	5.4	5.8	18	54	48.8	43.0	42.7	24.5
10.0	6.1	6.5	20	52	47.3	40.8	40.8	25.0
16.0	7.8	8.2	25	50	44.3	36.1	36.7	25.0
20.0	8.8	9.3	28	48	42.8	33.5	34.7	25.0
25.0	9.9	10.4	32	47	41.3	30.9	32.8	24.3
31.25	11.1	11.7	36	46	39.9	28.2	30.9	23.6
62.5	16.0	17.0	52	42	35.4	18.4	24.8	21.5
100.0	20.5	22.0	67	38	32.3	10.3	20.8	20.1

*ACR - ATTENUATION TO CROSSTALK RATIO

Mohawk reserves the right to change specification in the interest of product enhancement.

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