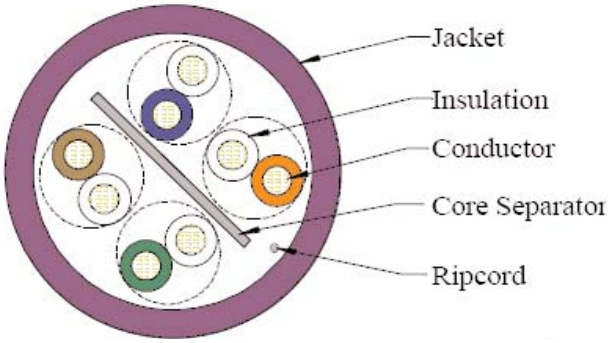
6 LAN™ Plus

4 Pair #23 AWG UTP
Category 6



DESCRIPTION

ENHANCED UNSHIELDED TWISTED PAIR (UTP) 6 LAN PLUS CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER TIA 568-B. THE CABLE EXCEEDS TIA 568-B.2-1 & ISO/IEC 11801 CATEGORY 6. THE CABLE CONSISTS OF #23 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A CORE SEPARATOR AND A RIPCORD, UNDER AN OVERALL JACKET. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0 ON EACH 1000 FT REEL OR BOX. THIS PRODUCT AND/OR ITS MANUFACTURE IS COVERED BY US PATENT NOS. 6998537, 6570095 & 5424491.

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 ETL (USA) & cETL (CANADA) LISTED FOR THIS APPLICATION BY PASSING NFPA 262 (FT6 OR PREVIOUSLY 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 NATIONAL ELECTRICAL CODE (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.

SUPPORTED APPLICATIONS

IEEE 802.3an 10GBASE-T (10 GIGABIT ETHERNET), 1000BASE-T (GIGABIT ETHERNET), 100BASE-T (FAST ETHERNET), AND IEEE 802.3 10BASE-T (ETHERNET), IEEE 802.3af POWER OVER ETHERNET FOR VoIP, ANSI.X3.263 FDDI TP-PMD, IEEE 802.5 4 AND 16 Mbps TOKEN RING, ATM UP TO 1.2 Gbps, 550 MHz BROADBAND VIDEO AND STANDARDS UNDER DEVELOPMENT SUCH AS ATM AT 2.4 AND 4.8 Gbps.

CONSTRUCTION

PRIMARIES:	CONDUCTOR: 23 AWG (.6 mm PL, .5mm NP) SOLID BARE COPPER INSULATION: PL: DUAL INSULATION, FEP ON ALL 4 PAIRS NP: THERMOPLASTIC POLYOLEFIN
PAIR ASSEMBLY:	2 PRIMARIES TWISTED IN VARIED LAYS
COLOR CODE:	SEE TABLE 1
CABLE ASSEMBLY:	4 PAIRS CABLED TOGETHER WITH A CORE SEPARATOR
JACKET:	PL: NO LEAD PLENUM RATED THERMOPLASTIC NP: NO LEAD FLAME RETARDANT THERMOPLASTIC JACKET COLOR SEE TABLE 2 NOMINAL CABLE OD: PL: .207" (5.26 mm) NP: .216" (5.5 mm)
LISTINGS:	ETL VERIFIED TO TIA 568-B.2-1 CAT 6 PL: C(ETL)US TYPE CMP NP: C(UL)US TYPE CMR

TABLE 1

PAIR NUMBER	PAIR COLOR CODE	
1	WHITE-BLUE	BLUE
2	WHITE-ORANGE	ORANGE
3	WHITE-GREEN	GREEN
4	WHITE-BROWN	BROWN

TABLE 2

PLENUM		NON-PLENUM	
PART NUMBER	JACKET COLOR	PART NUMBER	JACKET COLOR
M58801	BLUE	M58804	BLUE
M58802	WHITE	M58805	WHITE
M58863	YELLOW	M58920	YELLOW
M58803	GRAY	M58806	GRAY
M58914	PINK	M58919	PINK
M58915	GREEN	M58922	GREEN
M58916	RED	M58923	RED
M58917	ORANGE	M58924	ORANGE
M58918	BLACK	M58925	BLACK
M58794	VIOLET	M58795	VIOLET

PHYSICAL CHARACTERISTICS

CABLE WEIGHT:	PL: 28 lbs/1000ft (42 kg/km) NP: 26 lbs/1000ft (39 kg/km)
BENDING RADIUS:	1" (25mm) MIN (4 X CABLE OD)
PULLING TENSION:	25 lbf (110 N) MAX
OPERATING TEMP.:	-20ºC to +60ºC (-4ºF to +140ºF)
STORAGE TEMP.:	-20°C to +75°C (-4°F to +167°F)
INSTALLATION TEMP.*:	0°C to +60°C (+32°F to +140°F)

*THE INSTALLATION TEMPERATURE REFERS TO THE TEMPERATURE OF THE *CABLE* WHILE BEING INSTALLED OR PULLED. DO NOT INSTALL CABLE BELOW 0°C (+32°F).

PL = PLENUM
NP = NON-PLENUM

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6 LAN™ Plus

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ELECTRICAL CHARACTERISTICS (REF TABLE 3)

CONDUCTOR DCR: PL: 7.8 Ω/100m (23.8 Ω/Mft) MAX
NP: 8.9 Ω/100m (27.1 Ω/Mft) MAX

DCR UNBALANCE: 3% MAX

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

CAPACITANCE UNBALANCE PAIR/GROUND: 66 pF/100m (200 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE: 100 Ω ± 15% (1-250 MHz)

INPUT IMPEDANCE: 100 Ω ± 15% (1-100 MHz)
100 Ω ± 20% (>100-200 MHz)
100 Ω ± 25% (>200 MHz)

RETURN LOSS (RL): $20 + 5 \log_{10}(f)$ dB MIN (1-10 MHz)
25 dB MIN (>10-20 MHz)
$25 - 7 \log_{10}(f/20)$ dB MIN (>20 MHz)

INSERTION LOSS: $1.808 \sqrt{f} + .017f + .20/\sqrt{f}$ dB/100m MAX

NEAR END CROSSTALK (NEXT): $47.3 - 15 \log_{10}(f/100)$ dB/100m MIN

POWER SUM NEAR END CROSSTALK (PS NEXT): $45.3 - 15 \log_{10}(f/100)$ dB/100m MIN

EQUAL LEVEL FAR END CROSSTALK (ELFEXT): $27.8 - 20 \log_{10}(f/100)$ dB/100m MIN

POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT): $24.8 - 20 \log_{10}(f/100)$ dB/100 MIN

PROPAGATION DELAY: $534 + 36 / \sqrt{f}$ ns/100m MAX

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

NOMINAL VELOCITY OF PROPAGATION (NVP): 72% PL
68% NP

WHERE f = FREQUENCY IN MHz from .772 to 250 MHz.

TABLE 3
REFERENCE ELECTRICAL CHARACTERISTICS

FREQ (MHz)	**INSERTION LOSS** (dB/100m)		**NEXT** (dB/100m)		**ACR** (dB/100m)	**PS-NEXT** (dB/100m)		**PS-ACR** (dB/100m)	**ELFEXT** (dB/100m)	**PS-ELFEXT** (dB/100m)	**RL** (dB)
	avg	max	avg	min	min	avg	min	min	min	min	min
.772	1.7	1.8	85	79.0	77.2	80	77.0	75.2	-	-	-
1.0	1.9	2.0	83	77.3	75.3	78	75.3	73.3	67.8	64.8	20.0
4.0	3.6	3.8	74	68.3	64.5	69	66.3	62.5	55.8	52.8	23.0
8.0	5.1	5.3	70	63.8	58.5	65	61.8	56.5	49.7	46.7	24.5
10.0	5.7	6.0	68	62.3	56.3	63	60.3	54.3	47.8	44.8	25.0
16.0	7.3	7.6	65	59.2	51.6	60	57.2	49.6	43.7	40.7	25.0
20.0	8.1	8.5	64	57.8	49.3	59	55.8	47.3	41.8	38.8	25.0
25.0	9.1	9.5	62	56.3	46.8	57	54.3	44.8	39.8	36.8	24.3
31.25	10.2	10.7	61	54.9	44.2	56	52.9	42.2	37.9	34.9	23.6
62.5	14.8	15.4	56	50.4	35.0	51	48.4	33.0	31.9	28.9	21.5
100.0	19.0	19.8	53	47.3	27.5	48	45.3	25.5	27.8	24.8	20.1
155.0	24.2	25.2	50	44.4	19.2	45	42.4	17.2	24.0	21.0	18.8
200.0	27.8	29.0	49	42.8	13.8	44	40.8	11.8	21.8	18.8	18.0
250.0	31.5	32.8	47	41.3	8.5	42	39.3	6.5	19.8	16.8	17.3
300.0	35.0	36.4	46	40.1	3.7	41	38.1	-	18.3	15.3	16.8
350.0	38.2	39.8	45	39.1	-	40	37.1	-	16.9	13.9	16.3
400.0	41.3	43.0	44	38.3	-	39	36.3	-	15.8	12.8	15.9
500.0	47.0	48.9	43	36.8	-	38	34.8	-	13.8	10.8	15.2
550.0	49.7	51.8	42	36.2	-	37	34.2	-	-	-	14.9

VALUES ABOVE 250 MHz ARE FOR ENGINEERING INFORMATION ONLY

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