

MASTER SPECIFICATION

6 LAN™ PLUS CABLE

4 PAIR #23 AWG UTP CATEGORY 6e PLENUM

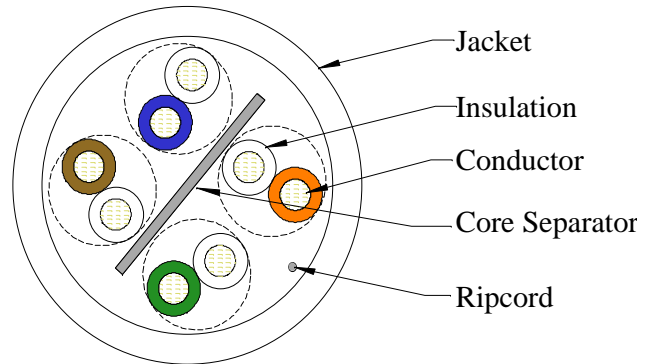
Now With 5 dB PS-NEXT and PS-ELFEXT Headroom

Design Number:  
**HT55936**

**DESCRIPTION**

UNSHIELDED TWISTED PAIR (UTP) 6 LAN PLUS CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER ANSI/TIA-568-C AND ISO/IEC 11801:2002 CLASS E. THE CABLE EXCEEDS ANSI/TIA-568-C.2 & ISO/IEC 11801:2002 CATEGORY 6 ELECTRICAL CHARACTERISTICS. THE CABLE CONSISTS OF #23 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A CORE SEPARATOR AND RIPCORD, UNDER AN OVERALL JACKET. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0 ON EACH 1000 FT REEL OR BOX. SEE BELDEN.COM/P FOR ANY/ALL APPLICABLE PATENT DETAILS.

THE CABLE IS PLENUM RATED 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.



**SUPPORTED APPLICATIONS**

IEEE 802.3 10BASE-T (ETHERNET), 100BASE-T (FAST ETHERNET), AND 1000BASE-T (GIGABIT 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 155 Mbps, 550 MHz BROADBAND VIDEO AND STANDARDS UNDER DEVELOPMENT SUCH AS ATM AT 622 Mbps, 1.2 & 2.4 Gbps.

**CONSTRUCTION**

**PRIMARIES:** CONDUCTOR: 23 AWG (.6 mm) SOLID BARE COPPER DUAL INSULATION, FEP ON ALL 4 PAIRS

**PAIR ASSEMBLY:** 2 PRIMARIES TWISTED IN VARIED LAYS

**COLOR CODE:** SEE TABLE 1

**CABLE ASSEMBLY:** 4 PAIRS CABLED TOGETHER WITH A CORE SEPARATOR

**JACKET:** NO LEAD PLENUM RATED THERMOPLASTIC JACKET COLOR: SEE TABLE 2 NOMINAL CABLE OD: .224" (5.69 mm)

**LISTING:** C(UL)US OR C(ETL)US TYPE CMP UL OR ETL VERIFIED TO CAT 6

**PHYSICAL CHARACTERISTICS**

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

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

MOHAWK PART NUMBER	MOHAWK DESIGN NUMBER	JACKET COLOR
M58802	HT56005	WHITE
M58801	HT56004	BLUE
M58914	HT57146	PINK
M58863	HT56980	YELLOW
M58803	HT56006	GRAY
M58915	HT57148	GREEN
M58916	HT57149	RED
M58917	HT57150	ORANGE
M58918	HT57151	BLACK
M58794	HT55936	VIOLET

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



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Rev	Description	Date	Init.
O	UPDATE ELECTRICALS & FOOTER	01/06/14	JS
P	UPDATE PATENT INFO & TABLE 3	08/14/15	JS
Q	UPDATE HEADER & ELECTRICALS	10/23/15	JS
R	UPDATE ELECTRICALS	12/11/15	JS
Date: 05/01/07		Page 1 of 2	
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**ELECTRICAL CHARACTERISTICS** (REF TABLE 3)

**STANDARDS:** EXCEEDS ANSI/TIA-568-C.2 CAT 6  
ICEA S-90-661-1997 CAT 6 &  
ISO/IEC 11801:2002 CAT 6  
HORIZONTAL CABLE

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

**DCR UNBALANCE:** 5% MAX

**MUTUAL CAPACITANCE:** 46 pF/m NOM

**CAPACITANCE UNBALANCE PAIR/GROUND:** 66 pF/100m 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<sub>10</sub>(f) dB MIN (1-10 MHz)  
25 dB MIN (>10-20 MHz)  
25 - 7 log<sub>10</sub>(f/20) dB MIN (>20 MHz)

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

**NEAR END CROSSTALK (NEXT):** 47.3 - 15 log<sub>10</sub>(f/100) dB/100m MIN

**POWER SUM NEAR END CROSSTALK (PS-NEXT):** 47.3 - 15 log<sub>10</sub>(f/100) dB/100m MIN

**EQUAL LEVEL FAR END CROSSTALK (ELFEXT):** 29.8 - 20 log<sub>10</sub>(f/100) dB/100m MIN

**POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT):** 29.8 - 20 log<sub>10</sub>(f/100) dB/100m MIN

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

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

**NOMINAL VELOCITY OF PROPAGATION (NVP):** 72%

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	82	79.0	77.2	-	-	-
1.0	1.9	2.0	83	77.3	75.3	80	77.3	75.3	69.8	69.8	20.0
4.0	3.6	3.8	74	68.3	64.5	71	68.3	64.5	57.8	57.8	23.0
8.0	5.1	5.3	70	63.8	58.5	67	63.8	58.5	51.7	51.7	24.5
10.0	5.7	6.0	68	62.3	56.3	65	62.3	56.3	49.8	49.8	25.0
16.0	7.3	7.6	65	59.2	51.6	62	59.2	51.6	45.7	45.7	25.0
20.0	8.1	8.5	64	57.8	49.3	61	57.8	49.3	43.8	43.8	25.0
25.0	9.1	9.5	62	56.3	46.8	59	56.3	46.8	41.8	41.8	24.3
31.25	10.2	10.7	61	54.9	44.2	58	54.9	44.2	39.9	39.9	23.6
62.5	14.8	15.4	56	50.4	35.0	53	50.4	35.0	33.9	33.9	21.5
100.0	19.0	19.8	53	47.3	27.5	50	47.3	27.5	29.8	29.8	20.1
155.0	24.2	25.2	50	44.4	19.3	47	44.4	19.3	26.0	26.0	18.8
200.0	27.8	29.0	49	42.8	13.8	46	42.8	13.8	23.8	23.8	18.0
250.0	31.5	32.8	47	41.3	8.5	44	41.3	8.5	21.8	21.8	17.3
300.0	35.0	36.4	46	40.1	3.7	43	40.1	3.7	15.3	15.3	16.8
350.0	38.2	39.8	45	39.1	--	42	39.1	--	13.9	13.9	16.3
400.0	41.3	43.0	44	38.3	--	41	38.3	--	12.8	12.8	15.9
500.0	47.0	48.9	43	36.8	--	40	36.8	--	10.8	10.8	15.2
550.0	49.7	51.8	42	36.2	--	39	36.2	--	10.0	10.0	14.9
600.0	52.3	54.5	41	35.6	--	38	35.6	--	9.2	9.2	14.6
625.0	53.5	55.8	41	35.4	--	38	35.4	--	8.9	8.9	14.5

SWEEP TESTED TO 625 MHZ; VALUES ABOVE 250 MHZ ARE FOR ENGINEERING INFORMATION ONLY.



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