

MASTER SPECIFICATION F/UTP CABLE 4 PAIR #23 AWG CATEGORY 6A PLENUM

Design Number:
HT55777

DESCRIPTION

SHIELDED TWISTED PAIR (F/UTP) CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER ANSI/TIA-568-C AND ISO/IEC 11801:2002 CLASS EA. THE CABLE IS UL COMPONENT COMPLIANT TO ANSI/TIA-568-C.2 CATEGORY 6A ELECTRICAL CHARACTERISTICS. THE CABLE CONSISTS OF #23 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A FLEXWEB® CORE SEPARATOR AND FOIL SHIELD, UNDER AN OVERALL JACKET. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0. 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 UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING NFPA 262 (FT6 OR PREVIOUSLY UL 910 STEINER TUNNEL) TEST.

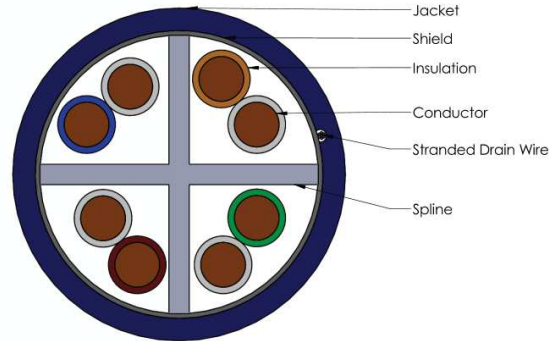


FIGURE 1

SUPPORTED APPLICATIONS

IEEE 802.3 10BASE-T (ETHERNET), 100BASE-T (FAST ETHERNET), AND 1000BASE-T (GIGABIT ETHERNET), IEEE 802.3 10GBASE-T (10 GIGABIT ETHERNET) ANSI.X3.263 FDDI TP-PMD, IEEE 802.5 4 AND 16 Mbps TOKEN RING, 550 MHz BROADBAND VIDEO AND ATM UP TO 4.8 Gbps.

CONSTRUCTION

PRIMARIES: CONDUCTOR: 23 AWG (.6 mm) SOLID BARE COPPER
INSULATION: FEP

PAIR ASSEMBLY: 2 PRIMARIES TWISTED IN VARIED LAYS

COLOR CODE: SEE TABLE 1

CABLE ASSEMBLY: 4 PAIRS CABLED TOGETHER WITH A CORE SEPARATOR

SHEILD: ALUINUM / MYLAR TAPE SHIELD

JACKET: NO LEAD PLENUM RATED THERMOPLASTIC
JACKET COLOR: SEE TABLE 2
NOMINAL CABLE OD: .250" (6.35 mm)

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

TABLE 1

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

TABLE 2

MOHAWK PART NUMBER	MOHAWK DESIGN NUMBER	JACKET COLOR
M59237	HT58021	RED
M59238	HT58022	ORANGE
M59239	HT58023	YELLOW
M59240	HT58024	GREEN
M59241	HT58025	GRAY
M59242	HT58026	WHITE
M59243	HT58027	BLACK
M59244	HT58028	BLUE

PHYSICAL CHARACTERISTICS

CABLE WEIGHT w/reel: 37 lbs/1000ft (53.7 kg/km)

BENDING RADIUS: 2.35" (58.7 mm) MIN

PULLING TENSION: 25 lbf (110 N) MAX

OPERATING TEMP.: -20°C to +75°C (-4°F to +167°F)

STORAGE TEMP.: -20°C to +75°C (-4°F to +167°F)

***INSTALLATION TEMP.:** 0°C to +50°C (+32°F to +122°F)

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



(978) 537-9961 Fax: (978) 537-4358
(800) 422-9961 www.mohawk-cable.com

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Rev	Description	Date	Init.
A	ELEC, OD, CONSTRUCTION UPDATED	12/20/2021	CMA
B	UPDATED DESIGN NUMBER	01/04/2022	CMA
C	ADDED UNITS TO SWEEP F.		
Date: 12/20/21		Page 1 of 2	
Orig: CMA		Review:	
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ELECTRICAL CHARACTERISTICS (REF TABLE 3)
STANDARDS: EXCEEDS ANSI/TIA-568-C.2 CAT 6A,
 ICEA S-90-661-1997 CAT 6 &
 ISO/IEC 11801 ed 2.0 AMEND 1 CLASS EA
 HORIZONTAL CABLE

CONDUCTOR DCR: 8.2 Ω/100m (25.0 Ω/Mft) MAX
DCR UNBALANCE: 5% MAX

MUTUAL CAPACITANCE: 46 pF/m NOM

CAPACITANCE UNBALANCE PAIR/GROUND: 90 pF/100m MAX

CHARACTERISTIC IMPEDANCE: 100 Ω ± 10% (10-550 MHz)

INPUT IMPEDANCE: 100 Ω ± 15% (1-100 MHz)
 100 Ω ± 18% (>100-250 MHz)
 100 Ω ± 32% (>250 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)

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

PROPAGATION DELAY SKEW: 45 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP): 70%

INSERTION LOSS (ATTENUATION): $1.82\sqrt{f} + .00091f + .25/\sqrt{f}$ dB/100m MAX

NEAR END CROSSTALK (NEXT): 44.3 - 15 log₁₀(f/100) dB/100m MIN

POWER SUM NEAR END CROSSTALK (PS NEXT): 42.3 - 15 log₁₀(f/100) dB/100m MIN

ATTENUATION TO CROSSTALK RATIO FAR END (ACRF): 27.8 - 20 log₁₀(f/100) dB/100m MIN

POWER SUM ATTENUATION TO CROSSTALK RATIO FAR END (PS ACRF): 24.8 - 20 log₁₀(f/100) dB/100m MIN

TCL: 30 - 10 log₁₀(f/100)

ELTCL: 35 - 20 log₁₀(f) 1 ≤ f ≤ 30 MHz

COUPLING ATTENUATION: 55 - 20 log₁₀(f/100) 30 ≤ f ≤ 500 MHz

POWER SUM ALIEN NEAR END CROSSTALK (PS ANEXT): 62.5 - 15 log₁₀(f/100) dB/100m MIN

POWER SUM ALIEN ATTENUATION TO CROSSTALK RATIO FAR END (PS AACRF): 38.2 - 20 log₁₀(f/100) dB/100m MIN
 77 dB MAX

NOTE: Attenuation To Crosstalk Ratio Far End (ACRF) was previously referred to as Equal Level Far End Crosstalk (ELFEXT).

WHERE f = Frequency In MHz from 1 to 500 MHz.

TABLE 3
REFERENCE ELECTRICAL CHARACTERISTICS

FREQ (MHz)	INSERTION LOSS (dB/100m)	NEXT (dB/100m)	PS NEXT (dB/100m)	ACRF (dB/100m)	PS ACRF (dB/100m)	RETURN LOSS (dB)	PROP. DELAY (ns/100m)	ALIEN CROSSTALK	
								PS ANEXT (dB/100m)	PS AACRF (dB/100m)
	max	min	min	min	min	min	max	min	min
1.0	2.1	74.3	72.3	67.8	64.8	20.0	575.0	67.0	67.0
4.0	3.8	65.3	63.3	55.8	52.8	23.0	557.0	67.0	66.2
8.0	5.3	60.8	58.8	49.7	46.7	24.5	551.7	67.0	60.1
10.0	5.9	59.3	57.3	47.8	44.8	25.0	550.4	67.0	58.2
16.0	7.5	56.2	54.2	43.7	40.7	25.0	548.0	67.0	54.1
20.0	8.4	54.8	52.8	41.8	38.8	25.0	547.0	67.0	52.2
25.0	9.4	53.3	51.3	39.8	36.8	24.3	546.2	67.0	50.2
31.25	10.5	51.9	49.9	37.9	34.9	23.6	545.4	67.0	48.3
62.5	15.0	47.4	45.4	31.9	28.9	21.5	543.6	65.6	42.3
100.0	19.1	44.3	42.3	27.8	24.8	20.1	542.6	62.5	38.2
155.0	24.1	41.4	39.4	24.0	21.0	18.8	542.1	59.6	34.4
200.0	27.6	39.8	37.8	21.8	18.8	18.0	541.5	58.0	32.2
250.0	31.1	38.3	36.3	19.8	16.8	17.3	541.3	56.5	30.2
300.0	34.3	37.1	35.1	18.3	15.3	16.8	541.1	55.3	28.7
350.0	37.2	36.1	34.1	16.9	13.9	16.3	540.9	54.3	27.3
400.0	40.1	35.3	33.3	15.8	12.8	15.9	540.8	53.5	26.2
500.0	45.3	33.8	31.8	13.8	10.8	15.2	540.6	52.0	24.2

SWEEP TESTED TO 500 MHz



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