

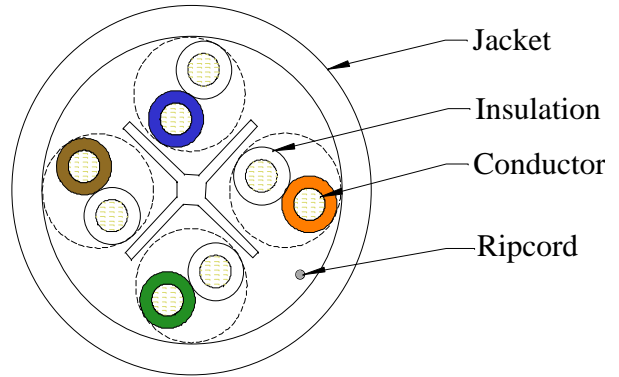
**MASTER SPECIFICATION**  
**GigaLAN<sup>®</sup> CABLE**  
**4 PAIR #23 AWG UTP CATEGORY 6E PLENUM**

Design Number:  
**HT42631**

**DESCRIPTION**

UNSHIELDED TWISTED PAIR (UTP) GIGALAN CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER ANSI/TIA-568-C AND ISO/IEC 11801 ed 2.2 (2011) CLASS E. THE CABLE EXCEEDS ANSI/TIA-568-C.2 AND ISO/IEC 11801 ed 2.2 (2011) CATEGORY 6 ELECTRICAL CHARACTERISTICS. THE CABLE CONSISTS OF #23 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A FLEXWEB<sup>®</sup> CORE SEPARATOR, WITH A 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 POE, IEEE 802.3at-2009 POE+, 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  
 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 FLEXWEB CORE SEPARATOR

**JACKET:** NO LEAD PLENUM RATED THERMOPLASTIC  
 JACKET COLOR: SEE TABLE 2  
 NOMINAL CABLE OD: .258" (6.55 mm)

**LISTINGS:** C(UL)US CMP, (UL) CMP-LP (0.6A) OR CL3P-LP (0.6A)  
 UL OR ETL VERIFIED CAT 6

**PHYSICAL CHARACTERISTICS**

**CABLE WEIGHT w/reel:** 36 lbs/1000ft (54 kg/km)

**BENDING RADIUS:** 1" (25 mm) MIN (4 x CABLE OD)

**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).

**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
M57413	HT39021	WHITE
M57414	HT42638	BLUE
M57750	HT45105	PINK
M57415	HT42639	YELLOW
M57417	HT42641	GRAY
M57416	HT42640	GREEN
M57620	HT44149	RED
M57861	HT45786	ORANGE
M57866	HT45815	BLACK
M57860	HT45785	VIOLET



**MOHAWK**  
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Rev	Description	Date	Init.
AK	UPDATE ELECTRICALS & FOOTER	01/06/14	JS
AL	UPDATE PATENT INFO, WGT & ELECS	12/14/15	JS
AM	UPDATE DIAMETER & FOOTER	02/06/17	JS
AN	UPDATE DESC, APPS, LISTINGS, TEMPS, STDS	09/01/17	JS
Date: 07/02/98		Page 1 of 2	
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**ELECTRICAL CHARACTERISTICS (REF TABLE 3)**

**STANDARDS:** EXCEEDS ANSI/TIA-568-C.2 CAT 6,  
 ICEA S-116-732-2013 CAT 6,  
 ISO/IEC 11801 ed 2.2 (2011) CLASS E &  
 IEC 61156-5 CAT 6 HORIZONTAL CABLE

**CONDUCTOR DCR:** 8.3 Ω/100m (25.3 Ω/Mft) MAX

**DCR UNBALANCE:** 5% MAX

**MUTUAL CAPACITANCE:** 46 pF/m NOM, 49 pF/m MAX

**CAPACITANCE UNBALANCE PAIR/GROUND:** 33 pF/100m MAX

**CHARACTERISTIC IMPEDANCE:** 100 Ω ± 7% (10-250 MHz)

**INPUT IMPEDANCE:** 100 Ω ± 12% (1-100 MHz)  
 100 Ω ± 15% (>100-250 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)+.7 dB MIN (>20 MHz)

**INSERTION LOSS:**  $1.68\sqrt{f} + .012f + .20/\sqrt{f}$  dB/100m MAX

**NEAR END CROSSTALK (NEXT):** 51.3 – 15 log<sub>10</sub>(f/100) dB/100m MIN

**POWER SUM NEAR END CROSSTALK (PS-NEXT):** 49.3 – 15 log<sub>10</sub>(f/100) dB/100m MIN

**EQUAL LEVEL FAR END CROSSTALK (ELFEXT):** 34.8 – 20 log<sub>10</sub>(f/100) dB/100m MIN

**POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT):** 32.8 – 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 (10-250 MHz)

**NOMINAL VELOCITY OF PROPAGATION (NVP):** 72% Nom, 58% Min

WHERE f = FREQUENCY IN MHz from .772 to 250 MHz,  
 except for DELAY, ELFEXT and PS-ELFEXT from 1 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)	DELAY (ns/100m)
	avg	max	avg	min	min	avg	min	min	min	min	min	max
.772	1.6	1.7	93	83.0	81.3	86	81.0	79.3	-	-	-	-
1.0	1.8	1.9	91	81.3	79.4	84	79.3	77.4	74.8	72.8	20.0	570
4.0	3.3	3.5	82	72.3	68.8	75	70.3	66.8	62.8	60.8	23.0	552
8.0	4.7	4.9	78	67.8	62.9	71	65.8	60.9	56.7	54.7	24.5	547
10.0	5.2	5.5	76	66.3	60.8	69	64.3	58.8	54.8	52.8	25.0	545
16.0	6.7	7.0	73	63.2	56.2	66	61.2	54.2	50.7	48.7	25.0	543
20.0	7.4	7.8	72	61.8	54.0	65	59.8	52.0	48.8	46.8	25.0	542
25.0	8.3	8.7	70	60.3	51.6	63	58.3	49.6	46.8	44.8	25.0	541
31.25	9.3	9.8	69	58.9	49.1	62	56.9	47.1	44.9	42.9	24.3	540
62.5	13.4	14.1	64	54.4	40.3	57	52.4	38.3	38.9	36.9	22.2	539
100.0	17.1	18.0	61	51.3	33.3	54	49.3	31.3	34.8	32.8	20.8	538
155.0	21.7	22.8	58	48.4	25.7	51	46.4	23.7	31.0	29.0	19.5	537
200.0	24.9	26.2	57	46.8	20.6	50	44.8	18.6	28.8	26.8	18.7	537
250.0	28.1	29.6	55	45.3	15.8	48	43.3	13.8	26.8	24.8	18.0	536
300.0	31.1	32.7	54	44.1	11.4	47	42.1	9.4	25.3	23.3	17.5	536
350.0	33.8	35.6	53	43.1	7.5	46	41.1	5.5	23.9	21.9	17.0	536
400.0	36.5	38.4	52	42.3	3.9	45	40.3	1.9	22.8	20.8	16.6	536
500.0	41.4	43.6	51	40.8	-	44	38.8	-	20.8	18.8	15.9	536
550.0	43.7	46.0	50	40.2	-	43	38.2	-	20.0	18.0	12.9	536
600.0	46.0	48.4	50	39.6	-	43	37.6	-	19.2	17.2	12.7	535
650.0	48.1	50.6	49	39.1	-	42	37.1	-	18.5	16.5	12.4	535
750.0	52.3	55.0	48	38.2	-	41	36.2	-	17.3	15.3	12.0	535

SWEEP TESTED TO 750 MHz; VALUES ABOVE 250 MHz ARE FOR ENGINEERING INFORMATION ONLY.



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