

區域網路電纜規格介紹 LAN cable specification

5.3 Category 6

5.3.1 特色：

Category 6 電纜適用於傳送語音及速率高至每秒1.0 GBPS之數據傳輸，其電纜特性須符合頻率達250MHz及以下時之各項電性需求。適用於T1、ISDN、10BASE-T (IEEE 802.3)、100BASE-T (IEEE 802.3)、Fast Ethernet、100VG-any LAN (IEEE 802.12)、155/622 MBPS ATM、550MHZ Broadband Vedio、1000BASE-T Gigabit Ethernet 網路。

5.3.2 規格：

TYPE CMP 75°C/300V 24AWG  
TYPE CMR 75°C/300V 24AWG  
TYPE CM 75°C/300V 24AWG

5.3.3 構造：

導體：24AWG軟銅單線。  
絕緣：PE、FRPE或FEP系列。  
被覆：耐燃PVC或耐燃PE(附加剝離繩)。

對別	絕緣厚度 (mm)	被覆厚度 (mm)	完成外徑 (mm)	最大電阻不平衡 (%)	特性阻抗 (Ω)	頻率 (MHz)	最大衰減量 (dB/100M)	最小串音 (dB)	
4	0.2	0.5	6.5	5	100±15	1	2.0	74.3	
						4	3.8	65.3	
						8	5.3	60.8	
						10	6.0	59.3	
						16	7.6	56.2	
	0.3	0.55	7.0			(1MHz~250MHz)	31.25	10.7	51.9
						62.5	15.4	47.4	
						100	19.8	44.3	
						200	29.0	39.8	
						250	32.8	38.3	

對別	頻率 (MHz)	最小多重串音 (dB)	最小遠端串音 (dB)	最小多重串音 (dB)	最小反射損失 (dB)	最大傳播延遲 (ns/100M)	最大傳播延遲偏移 (ns/100M)	最小傳播速率 (%)	最小縱向轉換損失 (dB)
4	1	72.3	67.8	64.8	20+5Log(f)	570	45	58.5	40
	4	63.3	55.8	52.8		.....	.....	.....	40
	8	58.8	49.7	46.7		.....	.....	.....	40
	10	57.3	47.8	44.8		545	45	61.1	40
	16	54.2	43.7	40.7	25	.....	.....	.....	38
	20	52.8	41.8	38.8		.....	.....	.....	37
	25	51.3	39.8	36.8		.....	.....	.....	36
	31.25	49.9	37.9	34.9		.....	.....	.....	35
	62.5	45.4	31.9	28.9	20-7Log(f/20)	.....	.....	.....	32
	100	42.3	27.8	24.8		538	.....	62.0	30
	200	37.8	21.8	18.8		.....	.....	.....	27
	250	36.6	19.8	16.8		536	45	62.1	26

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5.3.1 Characteristic:

Category 6 cables are suitable for the transmission of analog voice and high-speed up to 1.0 GBPS of digital data, cable character specification meet up to 250MHz of electrical performance. For example, T1、ISDN、10BASE-T (IEEE 802.3)、100BASE-T (IEEE 802.3)、Fast Ethernet、100VG - any LAN (IEEE 802.12)、155/622 MBPS ATM、550MHZ Broadband Video、1000BASE-T Gigabit Ethernet.

5.3.2 Specification:

TYPE CMP 75°C/300V 24AWG  
TYPE CMR 75°C/300V 24AWG  
TYPE CM 75°C/300V 24AWG

5.3.3 Construction:

Conductor: 24AWG solid copper conductor.  
Insulation: PE、FRPE or FEP compound.  
Jacket: Flame retardant PVC jacket or flame retardant PE jacket with rip-cord.

Pairs	Insulation Thickness (mm)	Jacket Thickness (mm)	O.D (mm)	D-C Resistance Unbalance (max.) (%)	Characteristic Impedance (Ω)	Test Frequency (MHz)	Insertion Loss (max.) (dB/100M)	Near-end Crosstalk Loss (min.) (dB)
4	0.2	0.5	6.5	5	100±15	1	2.0	74.3
						4	3.8	65.3
						8	5.3	60.8
						10	6.0	59.3
						16	7.6	56.2
	0.3	0.55	7.0	(1MHZ~250MHz)	20	8.5	54.8	
					25	9.5	53.3	
					31.25	10.7	51.9	
					62.5	15.4	47.4	
					100	19.8	44.3	
200	29.0	39.8						
250	32.8	38.3						

Pairs	Test Frequency (MHz)	Power-sum Near-end Crosstalk Loss (min.) (dB)	Far-end Crosstalk Loss (min.) (dB)	Power-sum Far-end Crosstalk (min.) (dB)	Return Loss (min.) (dB)	Propagation Delay (max.) (ns/100M)	Propagation Delay Skew (max.) (ns/100M)	Velocity of Propagation (%)	Longitudinal Conversion Loss (min.) (dB)
4	1	72.3	67.8	64.8	20+5Log(f)	570	45	58.5	40
	4	63.3	55.8	52.8		.....	.....	.....	40
	8	58.8	49.7	46.7		.....	.....	.....	40
	10	57.3	47.8	44.8		545	45	61.1	40
	16	54.2	43.7	40.7	25	.....	.....	.....	38
	20	52.8	41.8	38.8		.....	.....	.....	37
	25	51.3	39.8	36.8		.....	.....	.....	36
	31.25	49.9	37.9	34.9		.....	.....	.....	35
	62.5	45.4	31.9	28.9	20-7Log(f/20)	.....	.....	.....	32
	100	42.3	27.8	24.8		538	.....	62.0	30
	200	37.8	21.8	18.8		.....	.....	.....	27
	250	36.6	19.8	16.8		536	45	62.1	26