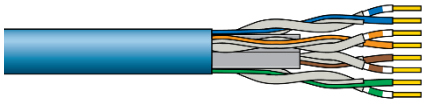
R&M*freenet* U/UTP Cat.6$_A$ 650 MHz CMP

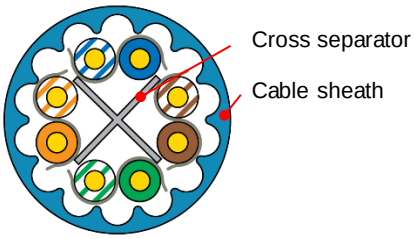
Cable reference

Part number	R883513
Source code	D
R&M positioning	Cat.6$_A$, Level 1

Cable construction

Conductor	Bare solid copper wire AWG23 ≥ Ø 0.022in (≥ Ø 0.57 mm)
Insulation	FEP ≤ Ø 0.0431in (≤ Ø 1.1 mm)
Twisting	2 wires to the pair
Cable lay up	4 pairs to the core
Pair screen	Non
Sheath	Flame Retardant, Low Smoke PVC, blue RAL 5015





Application

Primary (Campus), Secondary (Riser), Tertiary (Horizontal)
IEEE 802.3an: 10Base-T; 100Base-TX; 1000Base-T; 10GBase-T
IEEE 802.5 16 MB; ISDN; TPDDI; ATM
IEEE 802.3af / IEEE 802.3at / IEEE 802.3bt

Standards

ANSI/TIA-568.2, UL 444
Power over Ethernet (PoE) / Type 1-4

Fire rating

CMP

NFPA 262

Technical Data

Cable designation	U/UTP Cat.6$_A$ 650MHz 4PxAWG23
Packaging	Reel 1000ft (305m)
Outer diameter	Nominal 3.18in (8.0 mm)
Weight	55 lbs/kft (72kg/km)
Tensile force	110 N

Mechanical Properties

Bending radius	≥ 0.90in (32mm) during operation (without load)	
	≥ 2.12in (54mm) during installation (with load)	
Temperature range	During operation	-20°C…+ 75°C
	During installation	0°C…+ 60°C

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Electrical Properties (at 20°C ± 5°C)

DC loop resistance		≤ 9.38 Ω / 100 m
Resistance unbalance		≤ 4 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		≤ 56 pF / m
Capacitance unbalance		≤ 3.3 pF / m
Mean characteristic impedance		100 ± 15 Ω
Nominal velocity of propagation		Approx. 70 %
Propagation delay	At 1 MHz	≤ 570 ns / 100 m
Delay skew		≤ 45 ns / 100 m
Balance TCL	At 1 MHz	≥ 40 dB
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 30 dB
PS-Alien NEXT	At 500 MHz	Min. 55 dB
		Typ. 65 dB

Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (dB/100m)		NEXT (dB)		PS-NEXT (dB)		ACR-F [1] (dB/100m)		PS-ACR-F [1] (dB/100m)		Return loss (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
4	3.8	3.7	65.3	75	63.3	73	56	62	53	59	23	23.7
10	5.9	5.8	59.3	69	57.3	65	48	54	45	51	25	25.8
20	8.4	8.2	54.8	65	52.8	63	42	48	39	45	25	25.8
62.5	15	14.7	47.4	57	45.4	56	32	38	29	35	21.5	22.2
100	19.1	18.8	44.3	54	42.3	52	28	34	25	31	20.1	20.7
250	31.1	30.4	38.3	48	36.3	46	20	25	17	23	17.3	17.8
500	45.3	44.4	33.8	44	31.8	42	14	20	11	17	15.2	15.7
600	50.5	49.5	32.6	43	30.6	41	12.	18	9	15.2	14.7	15.1
650	52.3	52.3	31.10	41	30.1	40	11	17	8	14.8	14.5	14.8

[1] ACR-F was formerly known as ELFEXT.

Recommended connection technique

Module		Perm. Link Class D	Perm. Link Class E	Channel Class E$_A$	Perm. Link Class E$_A$	Short Link Class E$_A$
	Cat.6$_A$/s	✓	✓	✓	✓	✓
	Cat.6$_A$/u	✓	✓	✓	✓	✓

Third party certificate ETL Verified Category 6$_A$ to ANSI/TIA-568.2