R&M*freenet* F/UTP Cat.6$_A$ 500 MHz

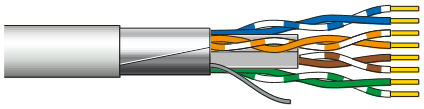
Dca
CPR

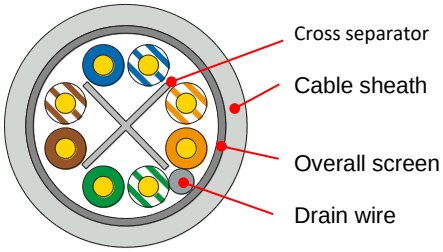
Cable reference

Part number	R806969
Source code	M
R&M positioning	Cat.6$_A$, Level 1
EAN / GTIN	7611821043430

Cable construction

Conductor	Bare solid copper wire AWG23 (≥ Ø 0.54 mm)
Insulation	Polyethylene ≤ Ø 1.10 mm
Twisting	2 wires to the pair
Cable lay up	4 pairs to the core with cross separator
Pair screen	Non
Overall screen	Alu / polyester tape with tin plated copper drain wire
Sheath	LSZH, gray RAL 7035





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

Confirming to European regulation “CPR” EN 50575

Standards

ISO/IEC 11801 2nd ed.; EN 50173-1; ANSI/TIA-568.2
IEC 61156-5 2nd ed; Power over Ethernet (PoE) / Type 1-4

Fire rating

LSZH

IEC 60332-1; IEC 60754-1; IEC 60754-2; IEC 61034
EN50575; Dca-s2,d2,a2; DOP D6500

Technical Data

Cable designation	F/UTP Cat.6$_A$ 500MHz 4PxAWG24
Packaging	Drum 500 m
Outer diameter	Nominal 6.7 mm
Weight	48 kg / km
Thermal load	710 MJ / km
Segregation class	C
Tensile force	90 N

Mechanical Properties

Bending radius	≥ 25 mm during operation (without load)	
	≥ 50 mm during installation (with load)	
Temperature range	During operation	-20°C…+ 60°C
	During installation	0°C…+ 50°C

R&Mfreenet F/UTP Cat.6A 500MHz 4PxAWG24 LSZH Dca NVP=78% ISO/IEC 11801 ANSI/TIA-568.2 M <batch no.> <dd/mm/yy> <meter> m

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Dca
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Electrical Properties (at 20°C ± 5°C)

DC loop resistance		≤ 19.0 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500V	≥ 5000 MΩ.km
Capacitance		53 pF / m max
Capacitance unbalance		≤ 1600 pF / km
Mean characteristic impedance		100 ± 5 Ω
Nominal velocity of propagation		Approx. 78 %
Propagation delay	At 1 MHz	≤ 538 ns / 100 m
Delay skew		≤ 40 ns / 100 m
Coupling attenuation		≥ 55 dB Type 2
Transfer impedance	At 1MHz	≤ 50 mΩ / m Grade 2
	At 10MHz	≤ 50 mΩ / m
	At 100MHz	≤ 200-mΩ / m
Balance TCL	At 1 MHz	≥ 50 dB Level 2
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 30 dB
PS-Alien NEXT	At 100MHz	Min. 62.5 dB
		Typ. 75 dB

Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (B/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	3.6	66.3	71	63.3	68	56	78	53	75	23	27
10	5.9	5.5	60.3	65	57.3	62	48	70	45	67	25	28
20	8.4	7.9	55.8	61	52.8	58	42	64	39	61	25	28
62.5	15.0	14.5	48.4	53	45.4	50	32.1	54	29.1	51	21.5	28
100	19.1	18.5	45.3	50	42.3	47	28	50	25	47	20.1	24
250	31.1	29.6	39.3	44	36.3	41	20	45	17	42	17.3	22
500	45.3	42.9	34.8	40	31.8	37	14	40	11	37	17.3	19

[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.5e/s	✓	–	–	–	–
	Cat.6/s	✓	✓	✓	–	–
	Cat.6$_A$/s	✓	✓	✓	✓	✓
	Cat.6$_A$ EL/s	✓	✓	✓	✓	✓

R&Mfreenet F/UTP Cat.6A 500MHz 4PxAWG24 LSZH Dca NVP=78% ISO/IEC 11801 ANSI/TIA-568-C.2 M <batch no.> <dd/mm/yy> <meter> m