

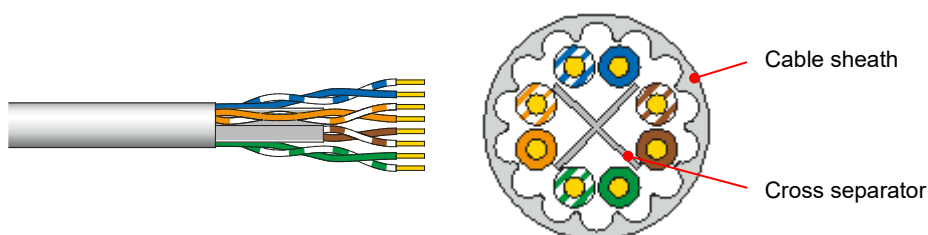
R&Mfreenet U/UTP Cat.6_A 650 MHz

Cable reference

Part number	R504252
Source code	S
R&M positioning	Cat.6 _A , Level 2

Cable construction

Conductor	Bare solid copper wire AWG23 ($\geq \varnothing 0.20$ mm)
Insulation	Polyethylene $\leq \varnothing 1.00$ mm
Twisting	2 wires to the pair
Cable lay up	4 pairs to the core with cross separator
Pair screen	Non
Overall screen	Non
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

Standards

ISO/IEC 11801 2nd ed.; EN 50173-1; ANSI/TIA-568.2
 IEC 61156-5 2nd ed.; EN 50288-6-1 ; Power over Ethernet (PoE) / Type 1-4

Fire rating

LSZH
 IEC 60332-1; IEC 60754-2; IEC 61034

Technical Data

Cable designation	U/UTP Cat.6 _A 650MHz 4PxAWG23
Packaging	Box RIB 305 m
Outer diameter	Nominal 6.5 mm
Weight	40 kg / km
Segregation class	B
Tensile force	100 N

Mechanical Properties

Bending radius	≥ 35 mm during operation (without load)	
	≥ 55 mm during installation (with load)	
Temperature range	During operation	-20°C...+ 60°C
	During installation	0°C...+ 50°C

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Electrical Properties

(at 20°C ± 5°C)

DC resistance		≤ 9.38 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		56 pF / m max.
Capacitance unbalance		≤ 1600 pF / km
Mean characteristic impedance		100 ± 15 Ω
Nominal velocity of propagation		Approx. 69 %
Propagation delay	At 1 MHz	≤ 570 ns / 100 m
Delay skew		≤ 45 ns / 100 m
Coupling attenuation		N/A
Balance TCL	At 1 MHz	≥ 40 dB
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 30 dB
PS-Alien NEXT	At 100 MHz	Min. 63 dB
		Typ. 69 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		66.3		63.3		56.0		53.0		23.0	
10	5.9	5.5	60.3	80	57.3	77	48.0	70	45.0	67	25.0	30
20	8.4		55.8		52.8		42.0		39.0		25.0	
62.5	15.0	14.5	48.4	62	45.4	59	32.1	50	29.1	47	21.5	30
100	19.1	18.5	45.3	60	42.3	57	28.0	42	25.0	39	20.1	30
250	31.1	29.6	39.3	50	36.3	47	20.0	37	17.0	34	17.3	28
500	45.3	42.9	34.8	47	31.8	44	14.0	31	11.0	28	15.2	27

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/u	✓	–	–	–	–
	Cat.6/u	✓	✓	–	–	–
	Cat.6/u	✓	✓	✓	–	–
	Cat.6 _A /u	✓	✓	✓	✓	✓