

R&Mfreenet U/UTP Cat.6 250 MHz

Cable reference

Part number R809797

Source code G

R&M positioning Cat.6, Level 2

Cable construction

Conductor Bare solid copper wire AWG24 (Ø 0.54 mm)

Insulation Polyethylene ≤ Ø 1.0 mm

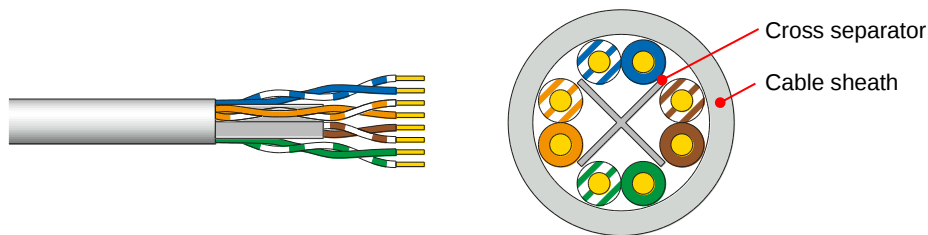
Twisting 2 wires to the pair

Cable lay up 4 pairs to the core with cross separator

Pair screen Non

Overall screen Non

Sheath PVC, gray RAL 7035



Application

Primary (Campus), Secondary (Riser), Tertiary (Horizontal)

IEEE 802.3an: 10Base-T; 100Base-TX; 1000Base-T

IEEE 802.5 16 MB; ISDN; TPDDI; ATM

IEEE 802.3af / IEEE 802.3at / IEEE 802.3bt

Standards

ISO/IEC 11801 2nded.; EN 50173-1; ANSI/TIA-568.2

IEC 61156-5 2nded.; IEC 61156-7; EN 50288-6-1

Power over Ethernet (PoE) / Type 1-4

Fire rating

PVC

IEC 60332-1

Technical Data

Cable designation U/UTP Cat.6 250MHz 4PxAWG24

Packaging Box305 m

Outer diameter Nominal 6.1 mm

Weight 40 kg / km

Segregation class 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

R&Mfreenet U/UTP Cat.6 250 MHz

Electrical Properties (at 20°C ± 5°C)

DC loop resistance		≤ 19 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Operating Voltage		80 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		56 pF / m max.
Capacitance unbalance		≤ 1600 pF / km
Mean characteristic impedance	At 100 MHz	100 ± 15 Ω
Nominal velocity of propagation		Approx. 68 %
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	≥ 30 dB
	At 100 MHz	≥ 20 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	3.6	66.3	80.7	63.3	79.8	56	68.1	53	64.5	23	31.6
10	6.0	5.7	60.3	73.6	57.3	70.9	48	59.7	45	56.9	25	29.9
20	8.5	8.1	55.8	74.4	52.8	71.2	42	54.2	39	50.8	25	33.0
62.5	15.5	14.7	48.4	66.1	45.4	59.2	32.1	46.0	29.1	42.6	21.5	29.9
100	19.9	18.9	45.3	60.2	42.3	56.2	28	44.1	25	41.4	20.1	27.0
250	33	31.7	39.3	58.5	36.3	55.6	20	34.9	17	32.3	17.3	27.5

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	✓	✓	–	–	–