

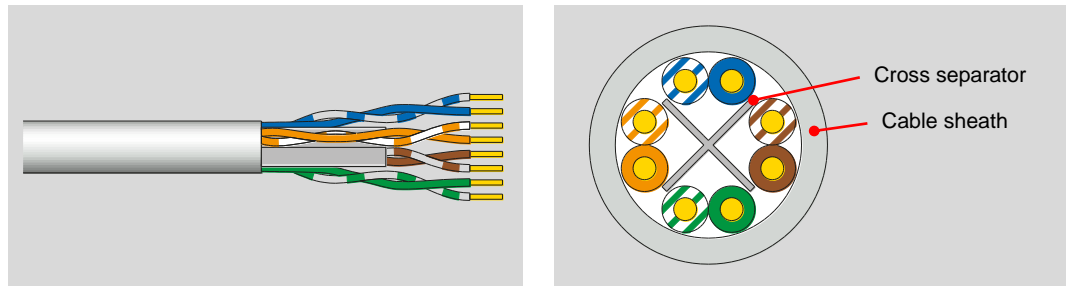
R&M *freenet* U/UTP Cat.6 250 MHz



R&M *freenet* U/UTP Cat.6 250MHz 4PxAWG24 LSZH B2ca NVP=70% ISO/IEC 11801 ANSI/TIA-568-C.2 U <batch no.> <dd/mm/yy> <meter> m

Cable reference	Part number	R854455
	Source code	U
	R&M positioning	Cat.6

Cable construction	Conductor	Bare solid copper wire AWG24 ($\geq \varnothing 0.54$ mm)
	Insulation	Polyethylene $\leq \varnothing 0.96$ 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, grey



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-2002: POE; IEEE 802.3at: POE+
 Confirming to European regulation "CPR" EN 50575

Standards

ISO/IEC 11801 2nd ed.; EN 50173-2; ANSI/TIA-568-C.2
 IEC 61156-5 2nd ed.; IEC 61156-7; EN 50288-6-1

Fire rating

LSZH
 IEC 60332-1-2; IEC 60332-3-24; EC 60754-2; IEC 61034
 EN50575; B2ca s1a-d1-a1 ; DOP B6043

Technical Data	Cable designation	U/UTP Cat.6 250MHz 4PxAWG24
	Packaging	Drum 500m
	Outer diameter	Nominal 6.2 mm
	Weight	43.2 Kg / km
	Segregation class	B
	Tensile force	100 N

Mechanical Properties	Bending radius	≥ 28 mm during operation (without load) ≥ 57 mm during installation (with load)
	Temperature range	During operation $-20^{\circ}\text{C} \dots + 60^{\circ}\text{C}$ During installation $0^{\circ}\text{C} \dots + 50^{\circ}\text{C}$



Electrical Properties (at 20°C ± 5°C)





DC loop resistance		≤ 92 Ω / km
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		44 pF / m max.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance @ 100 MHz		100 ± 15 Ω
Nominal velocity of propagation		Approx. 70 %
Propagation delay	At 1 MHz	≤ 535 ns / 100 m
Delay skew		≤ 40 ns / 100 m
Coupling attenuation		≥ 40 dB

Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (dB/60 m)		NEXT (dB)		PS-NEXT (dB)		ACR-F ¹⁾ (dB/60 m)		PS-ACR-F ¹⁾ (dB/60 m)		Return loss (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
4	3.8	2.4	66.3	72.1	63.3	71.0	56	65.3	53	64.3	23	29.9
10	6.0	3.8	60.3	69.2	57.3	66.9	48	62.8	45	60.7	25	30.1
20	8.5	5.5	55.8	59.6	52.8	59.8	42	51.9	39	48.7	25	32.4
62.5	15.5	9.8	48.4	55.1	45.4	51.7	32.1	45.1	29.1	38.8	21.5	36.1
100	19.9	12.5	45.3	49.7	42.3	48.5	28	40.0	25	37.5	20.1	33.6
250	33	20	39.3	45.2	36.3	42.0	20	27.8	17	26.3	17.3	27.1

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 Real10/u	✓	✓	-	-	-
	Cat.6 _A /u	✓	✓	-	-	-

Third party certificate