

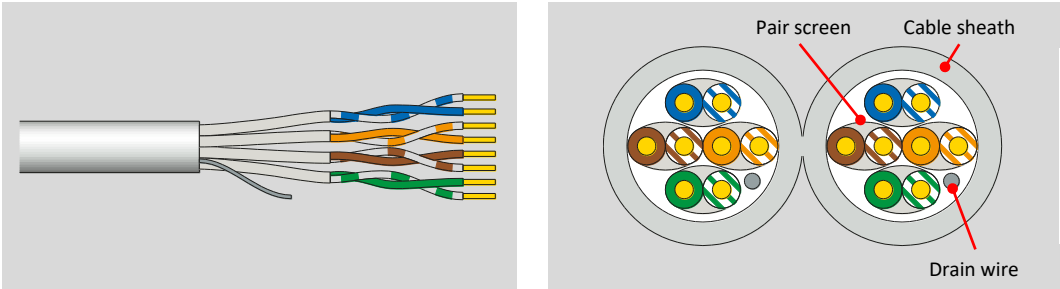
R&Mfreenet U/FTP Cat.6A 650MHz 2x4PxAWG23 LSZH DCA NVP=82% ISO/IEC 11801 ANSI/TIA-568-C.2 R <batch no.> <dd/mm/yy> <meter> m

R&Mfreenet U/FTP Cat.6A 650 MHz



Cable reference	Part number	R309652
	Source code	R
	R&M positioning	Cat.6A, Level 1

Cable construction	Conductor	Bare solid copper wire AWG23 ($\geq \varnothing 0.56$ mm)
	Insulation	Polyethylene $\varnothing 1.35$ mm (nom.)
	Twisting	2 wires to the pair
	Cable lay up	2 times 4 paires to the core
	Pair screen	Alu / polyester tape
	Overall screen	Non, tin plated copper drain wire
	Sheath	LSZH, gray RAL 7035, two cables parallel (separable)



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 2 nd ed.; EN 50173-1; ANSI/TIA-568-C.2
	IEC 61156-5 2 nd ed.; EN 50288-10-1; Power over Ethernet (PoE) / Type 1-4

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

Technical Data	Cable designation	U/FTP Cat.6A 650MHz 2x4PxAWG23
	Packaging	Drum 500 m
	Outer diameter	Nominal 7.1 / 14.4 mm
	Weight	97 kg / km
	Thermal load	1080 MJ / km
	Segregation class	C
	Tensile force	200 N

Mechanical Properties	Bending radius	≥ 35 mm during operation (without load)
		≥ 70 mm during installation (with load)
	Temperature range	During operation -20°C...+ 60°C
		During installation 0°C...+ 50°C



Electrical Properties (at 20°C ± 5°C)

DC loop resistance		≤ 16.5 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		43 pF / m max.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance		100 ± 5 Ω
Nominal velocity of propagation		Approx. xx %
Propagation delay	At 1 MHz	≤ 500 ns / 100 m
Delay skew		≤ 20 ns / 100 m
Coupling attenuation		≥ 70 dB
Transfer impedance	At 1 MHz	≤ 50 mΩ / m
	At 10 MHz	≤ 100 mΩ / m
	At 100 MHz	≤ 1000 mΩ / m
Balance TCL	At 1 MHz	≥ 40 dB
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 20 dB
PS-Alien NEXT	At 100 MHz	Min. 75 dB
		Typ. 80 dB

Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		PS-NEXT (dB)		ACR-F ¹⁾ (dB/100 m)		PS-ACR-F ¹⁾ (dB/100 m)		Return loss (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
4	3.8	3.6	66.3	100	63.3	100	56	91.4	53	88.2	23	28
10	5.9	5.7	60.3	100	57.3	100	48	90.2	45	87.2	25	30
20	8.4	8.0	55.8	100	52.8	100	42	89	39	86	25	30
62.5	15	14.2	48.4	100	45.4	97.5	32.1	85.9	29.1	82.9	21.5	26.5
100	19.1	18.1	45.3	97.4	42.3	94.4	28	84	25	81	20.1	25.1
250	31.1	29.0	39.3	91.4	36.3	88.4	20	75.7	17	75.5	17.3	22.3
500	45.3	41.8	34.8	86.9	31.8	83.9	14	72.1	11	69.1	17.3	22.3
600	-	46.0	-	85.9	-	82.7	-	70.2	-	67.2	-	22.3
650	-	51.8	-	84.4	-	81.7	-	68	-	65.4	-	21.5

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/s	✓	–	–	–	–
	Cat.6 Real10/s	✓	✓	✓	–	–
	Cat.6A EL/s	✓	✓	✓	✓	✓
	Cat.6A/s	✓	✓	✓ Best in Class	✓ Best in Class	✓ Best in Class

Third party certificate

3P Third Party Testing