

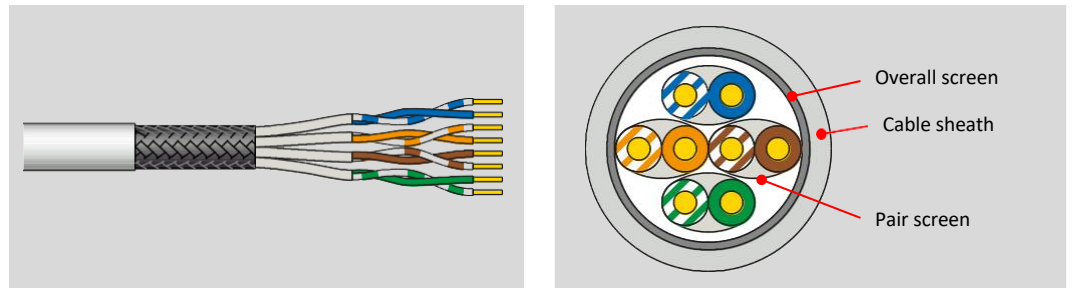
R&Mfreenet S/FTP Cat.6A 650 MHz



R&Mfreenet S/FTP Cat.6A 650MHz 4PxAWG23 LSFZRH Cca NVP=82% ISO/IEC 11801 ANSI/TIA-568-C.2 R <batch no.> <dd/mm/yy> <meter> m

Cable reference	Part number	R837024
	Source code	R
	R&M positioning	Cat.6A, Level 2

Cable construction	Conductor	Bare solid copper wire AWG23 ($\geq \varnothing 0.55$ mm)
	Insulation	Polyethylene $\varnothing 1.3$ mm Nominal
	Twisting	2 wires to the pair
	Cable lay up	4 pairs to the core
	Pair screen	Alu / polyester tape
	Overall screen	Tin plated copper braid (≥ 25 % coverage)
	Sheath	LSFRZH, 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
 Cisco Universal Power Over Ethernet (UPOE and UPOE+)
 Power over HDBaseT™ (PoH)
 Confirming to European regulation "CPR" EN 50575

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

Fire rating (LSZH)
 LSFZRH
 IEC 60332-3; IEC 60754-2; IEC 61034
 EN50575; Cca s1a-d1-a1 ; DOP C6573

Technical Data	Cable designation	S/FTP Cat.6A 650MHz 4PxAWG23
	Packaging	Drum 500 m
	Outer diameter	Nominal 7.6 mm
	Weight	60 kg / km
	Thermal load	590 MJ / km
	Segregation class	D
	Tensile force	100 N

Mechanical Properties	Bending radius	≥ 30 mm during operation (without load)
		≥ 60 mm during installation (with load)
	Temperature range	During operation -20°C...+ 70°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 nom.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance	At 100 MHz	100 ± 5 Ω
Nominal velocity of propagation		Approx. 82%
Propagation delay	At 1 MHz	≤ 500 ns / 100 m
Delay skew		≤ 20 ns / 100 m
Coupling attenuation		≥ 80 dB
Transfer impedance	At 1 MHz	≤ 15 mΩ / m
	At 10 MHz	≤ 10 mΩ / m
	At 100 MHz	≤ 30 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	91.2	53	88.2	23	28.0
10	5.9	5.7	60.3	100	57.3	100	48	90.2	45	87.2	25	30.0
20	8.4	8.0	55.8	100	52.8	100	42	89	39	86	25	30.0
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	34.3	31.9	39.3	91.4	36.3	88.4	20	75.7	17	75.5	17.3	29.5
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	-	85.7	-	82.7	-	70.2	-	67.2	-	22.3
650	-	48.0	-	84.4	-	81.4	-	68.0	-	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.6 _A EL/s	✓	✓	✓	✓	✓
	Cat.6 _A /s	✓	✓	✓	✓	✓

Third party certificate

3P Third Party Testing