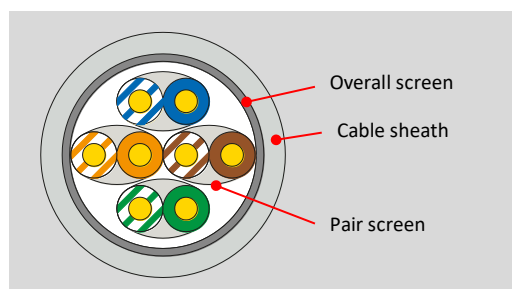
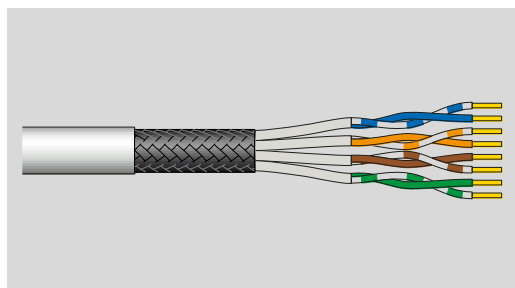


R&Mfreenet S/FTP Cat.7 1000 MHz**Cable reference**

Part number	R833677
Source code	R
R&M positioning	Cat.7, Level 3

Cable construction

Conductor	Bare solid copper wire AWG23 ($\geq \varnothing 0.56$ mm)
Insulation	Polyethylene $\leq \varnothing 1.4$ mm
Twisting	2 wires to the pair
Cable lay up	4 paires to the core
Pair screen	Alu / polyester tape
Overall screen	Tin plated copper braid (≥ 42 % 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 (PoE) / IEEE 802.3at (PoE+) / IEEE 802.3bt (4PPoE)
Universal PoE (UPoE / UPoE+) / Power Over HDBASE-T (POH)
Confirming to European regulation "CPR" EN 50575

Standards

ISO/IEC 11801 2nd ed.; EN 50173-1
IEC 61156-5 2nd ed.; EN 50288-4-1; Power over Ethernet (PoE) / Type
1-4 Universal PoE (UPoE / UPoE+) / Power Over HDBASE-T (POH)

Fire rating

LSFRZH
IEC 60332-3-24; IEC 60754-2; IEC 61034
EN50575; Cca-s1a,d1,a1; DoP C7075

Technical Data

Cable designation	S/FTP Cat.7 1000MHz 4PxAWG23
Packaging	Drum 500 m
Outer diameter	Nominal 7.6 mm
Weight	63 kg / km
Thermal load	591 MJ / km
Segregation class	D
Tensile force	115 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		≤ 1.2 pF / m
Mean characteristic impedance	At 100MHz	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		≥ 85 dB
Transfer impedance	At 1 MHz	≤ 10 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	≥ 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	3.6	3.4	93.4	100	90.4	100	82	100	79	98.2	23	33
10	5.7	5.4	87.4	100	84.4	97	74	100	71	94	25	30
20	8.1	7.7	82.9	100	79.9	97	68	98	65	93	25	30
62.5	14.5	13.7	75.5	100	72.5	97	58.1	97	55.1	92	21.5	30
100	18.5	18.1	72.4	97.4	69.4	94.4	54	94	51	91	20.1	30
250	30.2	29.0	66.4	91.4	63.4	88.4	46	85.7	43	85.5	17.3	27.3
500	44.1	41.8	61.9	86.9	58.9	83.9	40	82.1	37	79.1	17.3	25.3
600	48.9	46.0	60.7	85.7	57.7	82.9	38.4	80	35.4	77	17.3	25.3
1000	-	60.5	-	81.3	-	78.3	-	72.7	-	69.7	-	23.1

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/s	✓	-	-	-	-
	Cat.6/s	✓	✓	✓	-	-
	Cat.6A/s ISO	✓	✓	✓	✓	✓
	Cat.6A/s EL	✓	✓	✓	✓	✓

Third party certificate 3P Third Party Testing