

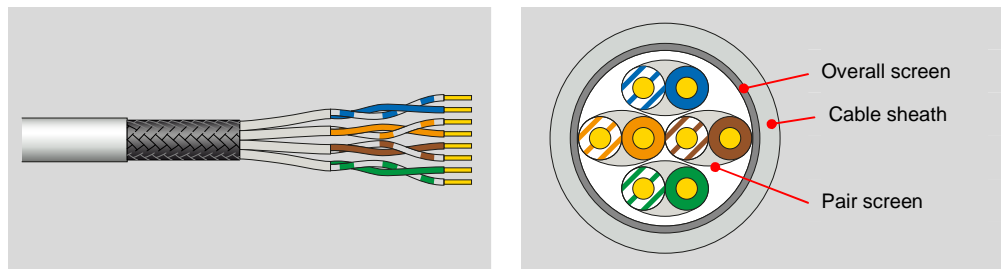
R&Mfreenet Real10 S/FTP Cat.6_A 650 MHz

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R&Mfreenet Real10 S/FTP Cat.6A 650MHz 4PxAWG23 LSZH NVP=76% ISO/IEC 11801 2nd ed.; EN 50173-1 IEC 61156-5 2nd ed.; EN 50288-10-1

Cable reference	Part number	R305649
	Source code	B / V
	R&M positioning	Cat.6 _A , Level 2

Cable construction	Conductor	Bare solid copper wire AWG23 (≥ Ø 0.56 mm)
	Insulation	Polyethylene Ø 1.35 mm Nominal
	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 (≥ 30 % coverage)
	Sheath	LSZH, 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-2002: POE; IEEE 802.3at: POE+

Standards

ISO/IEC 11801 2nd ed.; EN 50173-1
 IEC 61156-5 2nd ed.; EN 50288-10-1

Fire rating (LSZH)

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

Technical Data	Cable designation	Real10 S/FTP Cat.6A 650MHz 4PxAWG23
	Packaging	Drum 500 m
	Outer diameter	Nominal 7.3 mm
	Weight	50 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...+ 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 nom.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance	At 100 MHz	100 ± 5 Ω
Nominal velocity of propagation		Approx. 76 %
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	3.5	66.3	100	63.3	97	56	84	53	81	23	24
10	5.9	5.6	60.3	100	57.3	97	48	83	45	80	25	30
20	8.4	7.9	55.8	100	52.8	97	42	81	39	78	25	30
62.5	15	14.2	48.4	100	45.4	97	32.1	67	29.1	64	21.5	30
100	19.1	18.5	45.3	100	42.3	97	28	63	25	60	20.1	30
250	31.1	29.1	39.3	90	36.3	87	20	55	17	52	17.3	25
500	45.3	44.8	34.8	83	31.8	80	14	52	11	49	17.3	21
600	-	49,6	-	82	-	79	-	47	-	44	-	20
650	-	51,8	-	82	-	79	-	45	-	42	-	20

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 /s	✓	✓	✓	✓	✓

Third party certificate 3P Third Party Testing