

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

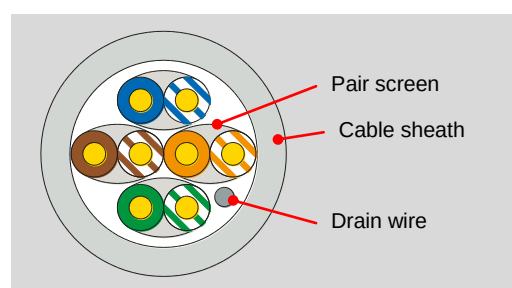
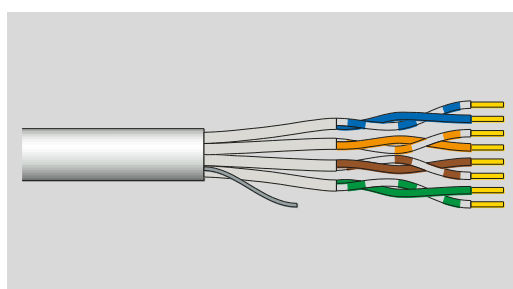
D_{ca}
CPR

Cable reference

Part number	R308247
Source code	M
R&M positioning	Cat.6 _A , Level 1

Cable construction

Conductor	Bare solid copper wire AWG23 ($\geq \varnothing 0.56$ mm)
Insulation	Polyethylene $\leq \varnothing 1.45$ mm
Twisting	2 wires to the pair
Cable lay up	4 paires to the core
Pair screen	Alu / polyester tape
Overall screen	Non, tin plated copper wire
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+
 Confirming to European regulation "CPR" EN 50575

Standards

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

Fire rating

LSZH
 IEC 60332-1; IEC 60754-1; IEC 60754-2; IEC 61034
 EN50575; Dca-s2,d2,a2 ; DOP D6526

Technical Data

Cable designation	Real10 U/FTP Cat.6A 650MHz 4PxAWG23
Packaging	Drum 500 m
Outer diameter	Nominal 7.6 mm
Weight	48 kg / km
Thermal load	550 MJ / km
Segregation class	C
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		≤ 14.6 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ.km
Capacitance		50 pF / m max.
Capacitance unbalance		≤ 1600 pF / km
Mean characteristic impedance		100 ± 5 Ω
Nominal velocity of propagation		Approx. 78 %
Propagation delay	At 1 MHz	≤ 538 ns / 100 m
Delay skew		≤ 40 ns / 100 m
Coupling attenuation		≥ 55 dB
Transfer impedance	At 1 MHz	≤ 50 mΩ / m
	At 10 MHz	≤ 50 mΩ / m
	At 100 MHz	≤ 100 mΩ / m
Balance TCL	At 1 MHz	≥ 50 dB
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 30 dB
PS-Alien NEXT	At 100 MHz	Min. 62.5 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	90	63.3	87	56	80	53	77	23	25
10	5.9	5.5	60.3	90	57.3	87	48	80	45	77	25	26
20	8.4	7.9	55.8	82	52.8	79	42	77	39	74	25	26
62.5	15	14.5	48.4	75	45.4	72	32.1	71	29.1	68	21.5	23
100	19.1	18.5	45.3	72	42.3	69	28	67	25	64	20.1	22
250	31.1	29.6	39.3	65	36.3	62	20	52	17	49	17.3	19
500	45.3	42.9	34.8	60	31.8	57	14	46	11	43	17.3	18
600	-	47.6	-	59	-	56	-	42	-	39	-	16
650	-	50	-	58	-	55	-	41	-	38	-	16

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	✓	✓	✓	✓	✓