

# R&Mfreenet PA-Cable U/UTP Cat.6A 650 MHz

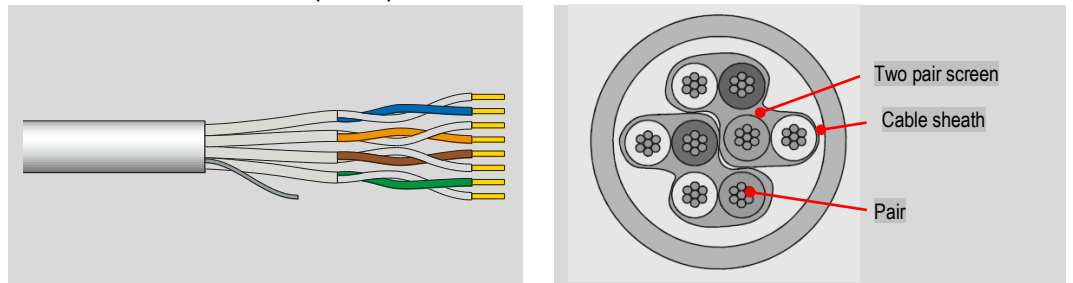
07.10.2016 / V1.0 / Ri

<b>Cable reference</b>	<b>Part number</b>	R516070
	<b>Source code</b>	B
	<b>R&amp;M positioning</b>	Cat.6A

<b>Cable construction</b>	<b>Conductor</b>	Stranded bare copper wires AWG26/7 ( $\geq \varnothing 0.45$ mm)
	<b>Insulation</b>	Polyethylene 1.05 mm
	<b>Twisting</b>	2 wires to the pair
	<b>Cable lay up</b>	4 paires to the core

<b>Screen</b>	Patented 10G-foil, WAve Reduction Patterns (WARP), Patented wrapping of two pairs each
<b>Sheath</b>	LSZH, grey RAL7035

### Two Pair shielded ( S-Foil)



<b>Application</b>	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; IEEE802.3at: POE+

The conductor diameter of this cable is smaller than that of standard installation cables. This leads to an increased attenuation and therefore the operating distance is reduced to 55 m permanent link length (compared to 90 m for standard installation cable).

<b>Standards</b>	ISO/IEC 11801 2 <sup>nd</sup> ed.; EN 50173-1; ANSI/TIA-568-C.2
	IEC 61156-6

<b>Fire rating</b>	LSZH
	IEC 60332-1; IEC 60754-2; IEC 61034

<b>Technical Data</b>	<b>Cable designation</b>	PA Cat.6A U/UTP 4P-4-AWG26/7 650MHz
	<b>Packaging</b>	Drum 2000 m
	<b>Outer diameter</b>	Nominal 6.2 mm
	<b>Weight</b>	39 kg / km
	<b>Thermal load</b>	529 MJ / km
	<b>Segregation class</b>	D
	<b>Tensile force</b>	50 N

<b>Mechanical Properties</b>	<b>Bending radius</b>	$\geq 30$ mm during operation (without load)
		$\geq 60$ mm during installation (with load)
	<b>Temperature range</b>	During operation -20°C...+ 60°C
	During installation 0°C...+ 50°C	



Convincing cabling solutions

Datasheets may change without prior notice

**Electrical Properties**  
(at 20°C ± 5°C)

<b>DC loop resistance</b>		25 Ω / 100 m
<b>Resistance unbalance</b>		≤ 3 %
<b>Test voltage</b>	DC, 1 min, core/core	1000 V
<b>Insulation resistance</b>	500 V	≥ 2000 MΩ * km
<b>Capacitance</b>		43 pF / m nom.
<b>Capacitance unbalance</b>		≤ 1500 pF / km
<b>Mean characteristic impedance</b>	100 MHz	100 ± 5 Ω
<b>Nominal velocity of propagation</b>		Approx. 76 %
<b>Propagation delay</b>	At 1 MHz	≤ 427 ns / 100 m
<b>Delay skew</b>		≤ 45 ns / 100 m
<b>Coupling attenuation</b>		≥ 40 dB

**Typical transmission characteristics (at 20°C)**

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		PS-NEXT (dB)		ACR-F <sup>1)</sup> (dB/100 m)		PS-ACR-F (dB/100 m)		Return loss (dB)		PSANEXT (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
<b>4</b>	5.7	5.3	66.3	70	63.3	65	56	59	53	56	23	24	67	70
<b>10</b>	8.9	7.6	60.3	63	57.3	60	48	51	45	48	25	25	67	70
<b>20</b>	12.6	10.8	55.8	59	52.8	56	42	45	39	42	25	25	67	70
<b>62.5</b>	22.5	19.6	48.4	51	45.4	48	32	35	29	32	20.7	22	65.6	68
<b>100</b>	28.7	24.7	45.3	48	42.3	45	28	31	25	28	19	21	62.5	65
<b>250</b>	46.6	39.0	39.3	42	36.3	39	20	23	17	20	15.6	17	56.5	60
<b>500</b>	67.9	55.0	34.8	38	31.8	35	14	17	11	14	15.6	17	52	55
<b>600</b>		64.0		35		32		15	-	12	-	17		40
<b>650</b>		68.0		33		30		14	-	11	-	17		30

<sup>1)</sup> ACR-F was formerly known as ELFEXT.