

HF PAIRED CABLES FOR STRUCTURED CABLE SYSTEMS

U/UTP Cat 5e PVC, F/UTP Cat 5e PVC, U/UTP Cat 5e PE, F/UTP Cat 5e PE,
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TY 16.K71-067-2012

TU 16.K71-067-2012

APPLICATION

The cables are intended for fixed laying and operation in frequency range up to 100 MHz (Cat. 5 and 5e acc. to GOST R 54429-2011 and ISO/IEC 11801).

Climatic versions acc. to GOST 15150:

УХЛ (moderate and cold climate), location categories 1 and 2, for cables with PE sheath and

У (moderate climate), location categories 3 and 4, for cables with PVC sheath

Cable **U/UTP Cat 5 PVC, U/UTP Cat 5e PVC** - for fixed laying inside the buildings and constructions.

Cable **F/UTP Cat 5 PVC, F/UTP Cat 5e PVC** - for fixed laying inside the buildings and constructions.

Cable **U/UTP Cat 5 PE, U/UTP Cat 5e PE** - for external laying on buildings' walls and suspension on poles of aerial communication lines.

Cable **F/UTP Cat 5 PE, F/UTP Cat 5e PE** - for external laying on buildings' walls and suspension on poles of aerial communication lines.

DESIGN

1. Conductors – single-wire conductor of soft round copper wire

2. Insulation of conductors in a quad: solid PE.

3. Pair – two conductors with insulation of different colours are twisted into a pair (unidirectional twisting).

4. Cable core – pairs or sub-units are stranded into a cable core, at this each sub-unit is taped with synthetic tapes of different colours.

- core of 4-quad cable is stranded of four star quads;

5. Belt wrapping – PETF tape; cable type U/UTP PVC has no belt wrapping.

6. Shield - for cables F/UTP PVC, F/UTP PE, a shield of Al-polymeric tape is taped over belt wrapping, a tinned copper wire with diameter 0,3-0,4 mm is laid under shield.

7. Sheath:

- for cables U/UTP PVC, F/UTP PVC - grey PVC compound;

- for cables U/UTP PE, F/UTP PE - black light-stabilized PE.

TECHNICAL PROPERTIES

Property	Frequency, MHz	standard value	
		Cat. 5	Cat. 5e
Conductor resistance per 1000 m at 20°C, Ohm/km, max.:	DC	95	
Conductor resistance unbalance in a working pair,%, max.:	DC	3	2
Conductor resistance unbalance between pairs,%, max.:	DC	-	4
Conductor insulation resistance at 20 °C, MOhm/km, min.:	DC	5000	
Test voltage during 1 minute, kV - between conductors - between conductors and shield	DC	1	
		0,7	
Mutual capacitance per 1000 m, pF/km	8×10^{-4}	56	
Pair-to-ground capacitance unbalance for unshielded cables, per 1000 m, pF, max.	8×10^{-4}	3400	1600
Pair-to-shield capacitance unbalance for shielded cables, per 1000 m, pF, max.	8×10^{-4}	3400	1600
Coupling impedance Z _T for shielded cables, MOhm, max.	1	10	
	10	10	
	30	30	

	100	100	
Radiation damping Ac, dB, min.	30-100	85	
Signal delay time t_p , per 100 m, ns	2-100 4-100	576 -	- 537,6
Signal delay time difference, max., Δt_p between two any pairs, per 100 m and at temperature 20°C, ns, max.	4-100	45	
Attenuation factor per 100 m and at temperature 20°C, dB, max.	1 4 10 16 20 31,25 62,5 100	2,1 4,3 6,6 8,2 9,2 11,8 17,1 22,0	2,1 4,1 6,5 8,3 9,3 11,7 17,0 22,0
Unbalance Attenuation Near End (TCL), per 100 m, dB, min.	1-100	-	20
Equal Level Far-End Unbalance Attenuation (EL TCTL), per 100 m, dB, min.	1-100	-	15
Power Sum Near-End Crosstalk PS NEXT at fixed frequencies, per 100 m, dB, min.	1 4 10 16 20 31,25 62,5 100	62,0 53,0 47,0 44,0 42,5 39,6 35,1 32,0	62,3 53,3 47,3 44,3 42,8 39,9 35,4 32,3
NEXT for any pairs combination per 100 m, dB, min.	1 4 10 16 20 31,25 62,5 100	62,0 53,0 47,0 44,0 42,5 39,6 35,1 32,0	65,3 56,3 50,3 47,3 45,8 42,9 38,4 35,3
Power Sum Equal Level Far-End Crosstalk (PS EL FEXT) at fixed frequencies, per 100 m, dB, min.	1 4 10 16 20 31,25 62,5 100	- - - - - - - -	61,0 49,0 41,0 36,9 35,0 31,1 25,0 21,0
Equal Level Far-End Crosstalk (ELFEXT) for any pairs combination per 100 m, dB, min.	1 4 10 16 20 31,25 62,5 100	61,0 49,0 41,0 37,0 35,0 31,0 25,0 21,0	64,0 52,0 44,0 39,9 38,0 34,1 28,0 24,0
Return Losses (RL), dB, min.	1-10 10-20 20-100	23 23 16	25 25 21.1

Cable transportation and storage conditions shall comply with requirements of GOST 18690
Laying temperature:
- for cables in PE sheath: not less than minus 20°C

- for other cables: not less than minus 10°C

Transportation temperature: from minus 30°C to plus 50°C

Storage temperature: from minus 50°C to plus 50°C

Operation temperature for fixed installation:

- for cables in PE sheath: from minus 60°C to plus 60°C

- for other cables: from minus 40°C to plus 60°C

Cable bending radius for laying and installation: min. 8 max. outer diameters

Warranty period for cable operation after the commissioning: 3 years

The cables are delivered on wooden drums acc. to GOST 5151-79 or in coils