Draka

UC Data Cable – a fast, reliable and ubiquitous part of the Draka Office Network Solution

About Draka Communication

In a nutshell, we believe that connectivity helps make life at home, work and on teh move better and more rewarding. That's why we are proud of the role we play in developing, manufacturing and building the network that brings people, data and systems together. All over the world, we provide the backbone for today's communication solutions.

And tomorrow's, too. How do we do this? On the one hand, we combine market insight with technological know-how, on the other we build strong, long-lasting relationships with our customers.

In this way, we can help you and your customers to stay ahead, enhancing connectivity with advanced office network solutions and services that are designed to last.

Cable concepts with future prospects

For many decades, we have been designing, developing, manufacturing and selling a variety of high-quality copper and optical fibre cables in order to offer you cable solutions for present and future challenges – let it be standard products or tailor-made special cables.

In the communication infrastructure, our well proven products are always in use wherever it is a question of professional and undisturbed data, voice, audio and video transmission. The Draka UC range as described in this brochure has been designed for data transmission and offers a high-capacity and flexible cable concept with best future prospects to our customers from within the industry, trade and service sector.

High speed

The demands on modern networks are very high. Speed and transmission reliability are of utmost priority. In this respect, Gigabit Ethernet offers an enormous potential for the future.

For many years, we have been a partner to companies from within the industry, trade and service sector. Thus we are well aware of our customers' needs. Planning reliability is an important factor for you and for us, as today's cable concepts must also meet the requirements of tomorrow's developments. The Draka UC range has the physical potential to support structured networking for future requirements.

Our product range (Cat.5e, Cat.6, Cat.7 and multimedia cables) has been adjusted to a variety of applications and allows highest transmission ratios. For high-end applica - tions, our UC900 up to UC1500 series offer important reserve capacity. Our cable series have been designed to also allow cable sharing between all categories on the level of the lower category.

Flexibility

Our high-quality UC cables are always in use wherever it is a question of high-speed data transmission in local networks (LAN). They are used for standardized and manufacturer- independent networks – e.g. Token Ring, Ethernet, ISDN, TPDDI, Fast Ethernet 1000BaseT or 10GbE. Aside from voice and data communication, our solutions are also applicable for video communication. Among others, our product range comprises installation and patch cables which have been tested as to their compatibility with common components. Thus, we can guarantee maximum transmission reliability.

Free choice

The right equipment for all applications: Whether high transmission capacity, electromagnetic compatibility (EMC) or best fire retardancy characteristics: We can offer the optimum data cable for every application. All our products are certainly manufactured at the highest quality standards. And it is no question that we will be pleased to advise you as to the installation. Short delivery times and best service guaranteed.

	Types	Frequency MHz	EN 50173	ISO/IEC 11801 2 ed
	**UC300**	100	Cat 5e Class D	Cat 5e Class D
	**UC400**	250	Cat 6 Class E	Cat 6 Class E
	**UC500**	500	Cat 6_A Class E_A	Cat 6_A Class E_A
	**UC900**	600	Cat 7 Class F	Cat 7 Class F
	**UC1200**	1200	Cat 7_A Class F_A	Cat 7_A Class F_A
	**UC1500**	1200	Cat 7_A Class F_A	Cat 7_A Class F_A
	**UC MULTIMEDIA**	1500	MULTIMEDIA	MULTIMEDIA

Cabling for future requirements

The data transmission according to Gigabit-Ethernet 1000BaseT is based on a "full-duplex principle" – i.e. via all cable pairs at the same time and parallel in both directions (bi-directional). This results in numerous closely tolerated transmission characteristics for cabling in future requirements. The most important characte - ristics for the future are: PS-NEXT, PS-ELFEXT and PS-ACR.

Convincing PowerSum

The major reason for interference in local networks is the NEXT (Near End Crosstalk). This effect is caused by mutual influence (coupling) of pairs next to each other.

The higher the transmission performance the stronger the interference. In modern network applications being based on a bi-directional data transmission, the inter - ference increases. Power Sum (PS) values can be calculated for all relevant characteristics. In times of high data rates they allow indications of the performance and transmission capabilities of a data cable. For example, a high PS-NEXT is important for users. Due to the core stranding and the patented foil screening, the high-end cables of our UC1500 series reach values being nearly 30 dB better than required by the CAT 7 standard. These resources are also for your benefit.

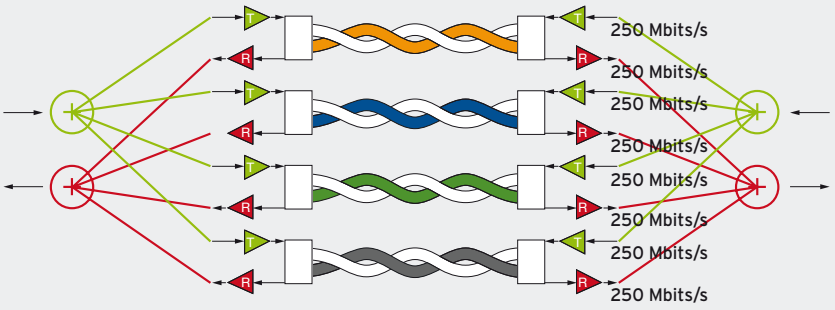
Standards

The received signal is decisive for all highspeed networks. Here, the FEXT (Far End Crosstalk) measures the crosstalk at the receiver. Due to the cable attenuation, the FEXT is substantially lower than the NEXT.

The more meaningful characteristics ELFEXT (Equal Level Far End Crosstalk) for the transmission performance can be obtained by deducting the insertion loss from the FEXT value. The resultant PowerSum then is PS-ELFEXT.

Undisturbed signals

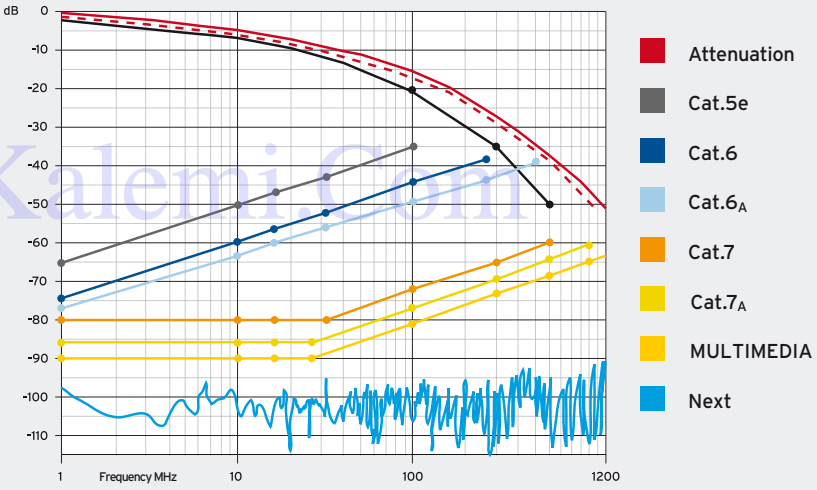
The chart shows the inference caused by NEXT and FEXT under realistic conditions and with full utilisation of Gigabit Ethernet. A transfer of information is only possible when the encoded data can be recognised, i.e. the attenuated signal at the receiver must be considerably stronger than the constant interference signal NEXT. Only the application of data cables with optimum channel separation protects against unintended inference and thus represents the condition for the full utilisation of the advantages of modern network application.



T = Transmitter
R = Receiver

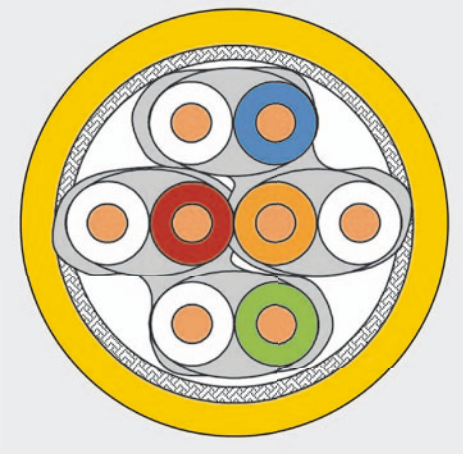
Relevant characteristics

The central characteristics of a passive network is the ACR (Attenuation Crosstalk Ratio). The ACR shows the attenuation ratio in proportion to the crosstalk ratio. The quality of the transmission is determined by the signal-to-noise ratio (sum of all interferences). Thus, the PS-ACR (cable signal-to-noise ratio) is the relevant characteristics for the assessment of the transmission capacity.



Minimum ACR

A minimum ACR of 10 dB is required for highest signal frequencies. The higher the frequency the lower the ACR. Example: For our data cable UC1500, the measurement result shows that the near-end-crosstalk attenuation is on such a low level that it can hardly be traced.



10 GBASE-T Performance

10Giga bit Ethernet is simply the next protocol above 1000BaseT and is 10 times faster, 10 times more bandwidth, higher performance. Using the same full duplex systems copper cabling delivers bi-directional transmission rates at 250MHz per pair.

Transmission Parameters already laid out by 1000BaseT are enough for the increase with only one extra test required, Exogeneous (alien) Xtalk (electrical noise).

Error detection

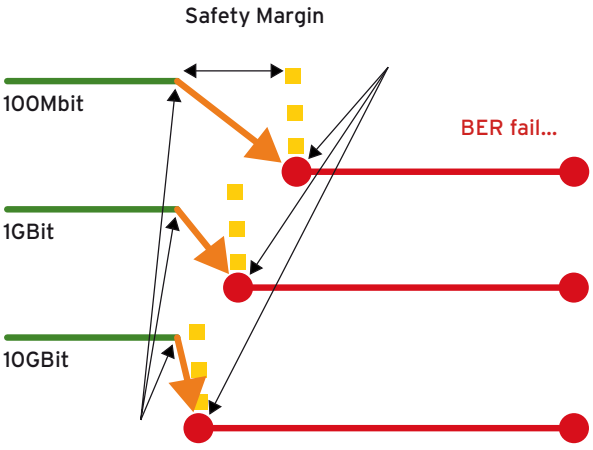
Ethernet works because of Error Detection Systems. The receiving end will poll until transmission is correct. If a system is noisy the error detection will retransmit the same information many times, slowing every transmission: there is a point at which the system will fail. 10G has the smallest safety (fail) margin. The components have to be good.

Margin

In standardisation the margin is built in to ensure plug and play works first time. 100m of cabling is guaranteed to work using components that are manufactured to the standard. The margin is steadily becoming smaller, 10G is almost non-existent, as the error detection systems cannot work above a certain noise level. As bandwidth increases so does noise, no matter how good components are. The min. cabling standard is the lowest minimum possible, the TIA being the lowest, and can always be improved which is Draka's intention.

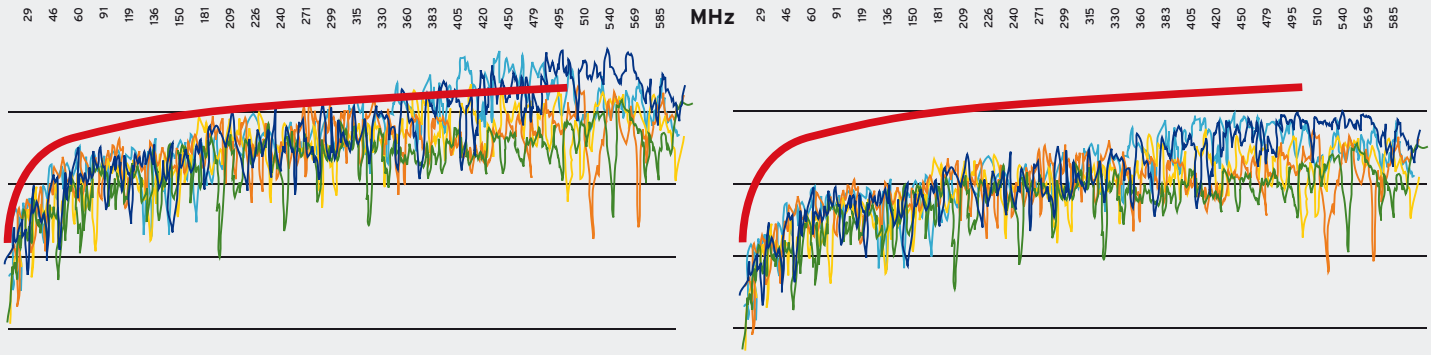
Exogenous (Alien) Xtalk

Alien Xtalk is the disturbance (noise) coupled onto a transmitting signal pair from all the other transmitting pairs (all other systems plus 10G). Space between the pairs does decrease the level of noise, and can be seen in the graph, that a U/UTP with help (distance increased) nearly passes the test.



Min. cabling standard

Performance



10G axtalk **Draka Comteq ZEBRA**

Screening

Methods to increase margin can involve screening. The exogenous Xtalk coupling devices can be fully deterred by earthing the mutual signal path. Patented foil systems already used by Draka deliver exactly the ultimate level of screening required. In this situation, and as written in the standards, the test for exogenous xtalk is unnecessary for screened cables with good screening attenuation performance.

UTP

Space was mentioned earlier as a method of lessening effects from coupling signals. Using imaginative shaped jacket's are possible to decrease signal interference, however the interference is still being allowed. Decreasing the expected signal interference might be successful in the lab but what of the real situation of installed cable with limited safety margin?

The patent Draka Technology: ZEBRA

(Zero Earth-loop By Reflectorfoil Application)

We understand how screening functions and lead in this market area. The world market is however U/UTP. With our ZEBRA technology Draka combines for the first time advantages of screened protection in an unscreened cable.

- protected by closely placed foil segments
- short foil segments avoid antenna effect
- avoidence of loop currents by segmentation isolation

This combination keeps the cable comparably small and easy to install – just like a U/UTP should be.

Perfection and Quality

Only a cable ensuring optimum ratios with all characteristics can offer the full performance spectrum. Our multimedia cables go through a constant manufacturing process with extremely close tolerances. With development and production, our emphasis lies on high-quality materials and the state-of-the-art manufacturing processes. Thus we are able to guarantee excellent performance and reliability.

Patented solutions

A compact and solid cable construction guarantees low attenuation and minimum reflections for the whole frequency range. Due to the high requirements on attenuation, crosstalk and consistency of the impedance, we only use stranded wires or larger copper conductors for the production of our UC cables.

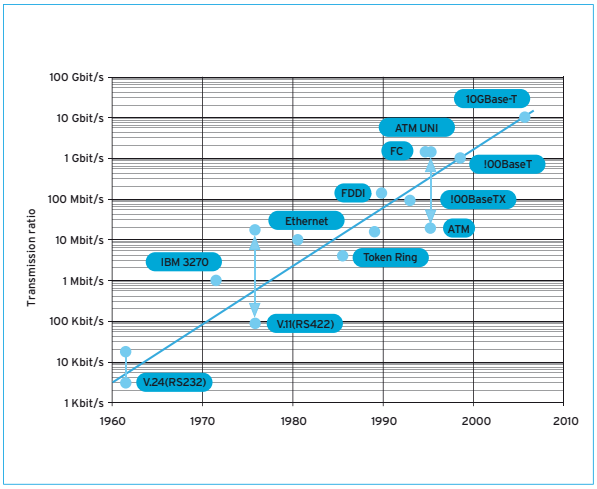
For Cable-Sharing, i.e. several applications on one cable, the pair and overall screening is the best cable construction. With its aluminium-laminated plastic foil and patented foil screening, our cables of series UC400, UC500 and UC1500 guarantee an optimum pair screening. With conductor diameters of 0.56 mm (AWG23) and 0.64 (AWG22), foam-skin core insulations enable us to achieve lowest core diameters. We are of course certified according to ISO 9001, additionally we practise environmental management in line with ISO EN 14001.

Return Loss

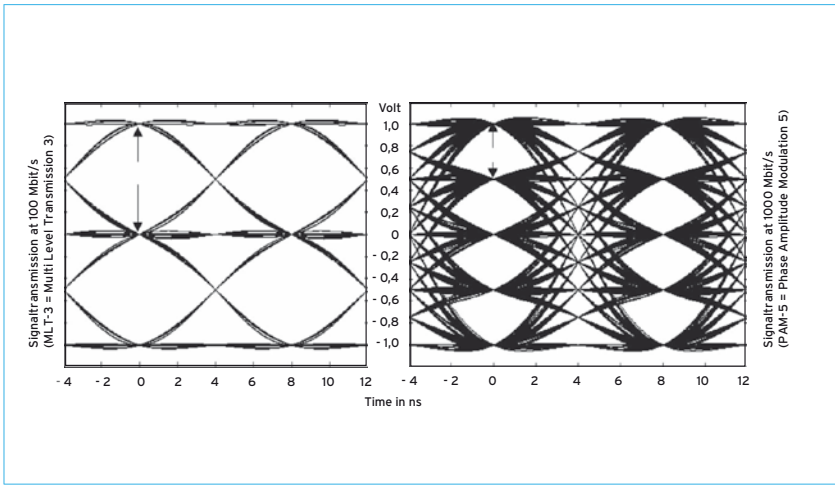
Modern network applications require highquality cables as manufactured here at Draka Comteq.

Slight deviations within the insulation material lead to irregularities on the transmission link and cause reflections. This 'return loss' arises when parts of the transmission signal at the deviation are returned to the transmitter due to reflection.

Performance



„Standard Growth" continues to be the trend



Signaltransmission at 100 Mbit/s and 1000 Mbit/s

Propagation Delay and Delay Skew

Due to the increased requirements on Gigabit Ethernet the propagation delay and the delay skew become more important. The delay skew is the transmission time difference of two or more pairs.

With the twisted lengths designed by us, our UC data cables achieve a minimum propagation delay and delay skew of less than 12 ns/100m. Also with great application lengths, this means full capacity for high-speed applications with synchronous transmission over all 4 pairs.

Transmission reliability

Due to the high data rates, data transmission is increasingly subject to interferences. Low quality cables generate additional interferences and the risk of transmission failure increases.

Despite high-speed applications, existing data rates and the network capacity are not fully used. Therefore, you can rely now on our highquality data cables with hardly any risk of interference. So – invest in the power of your network to meet future requirements.

Reliability and Noise Immunity

For many years, "electromagnetic compatibility" (EMC) has been a must for electric equipment. So far the main problem was external interferences influencing system's causing failure. With high-quality cabling a new problem arises: the Alien Crosstalk (crosstalk of one cable's transmission on all pairs next to another cable's receiving signal path on a single pair).

Screening efficiency

EMC stands for the capability of a system to work without having a negative influence (emission of interference) on other systems.

With our Universal Cable series we offer a wide range of installation and connection cables with an optimum screening factor. This ensures the compliance with EMC regulations and the protection of your system.

Noise Immunity

Our screened symmetric cables are known for their high noise immunity and low emission of interference – as shown by the standards EN 55022 Class B and EN 50082-1. Moreover, leading manufacturers of LAN components certify that there is no emission of interference and a high network reliability with our Cat.5e to Cat.7 cables when applied at 100 Mbit/s.

Screening factors

The application of high-quality materials and the screening factor are decisive for an optimum screening.

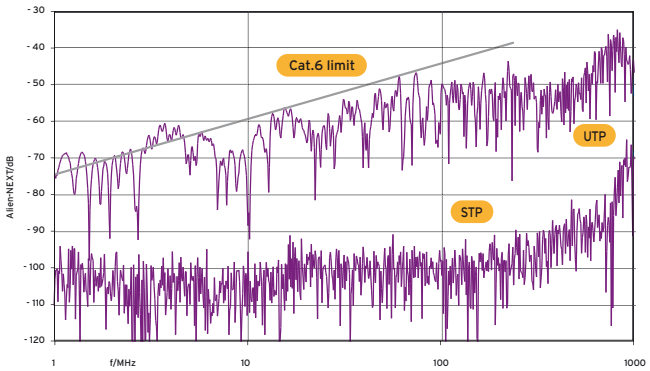
Complying with the respective EMC requirements, our screened UC cables are available in the following quality options:

- S (Screen): Overall screen of aluminium-laminated foil
- HS (High Screen): Highly screened with aluminium-laminated foil and tinned copper braid
- SS (Super Screen): Pair screen with aluminium-laminated foil and overall screen with tinned copper braid

The application of highly screened cables saves adjustments in case of further installations. This means for you a very cost effective cabling solution for now and the future.

EMV

Alien crosstalk requires screening



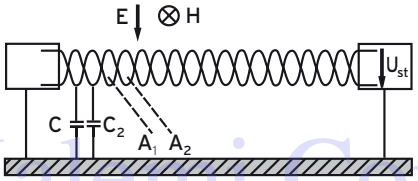
Uninfluenced

More and more important in practice: The interference of reliable data transmission by mutual influence of unscreened and undefined communication cables. The degree of the mutual influence is called "Alien Crosstalk". Although this value is not recorded with link tests, it reduces the ACR like a normal NEXT.

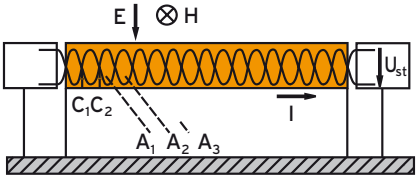
At 100 MHz, the Alien Crosstalk of two unscreened Cat.6 cables laid in parallel amounts to 55 dB, whereas it reaches 95 dB with screened cables. This can be of relevance at the patch panel where a tight bundling of the cables is necessary.

Optimum transfer impedance

The transfer model of a screened (below) and unscreened (above) conductor clearly shows: In this case of an electromagnetic wave reaching the cable from outside leads to interference due to induction. With relatively low frequencies, this effect may be limited by symmetric transmission elements.



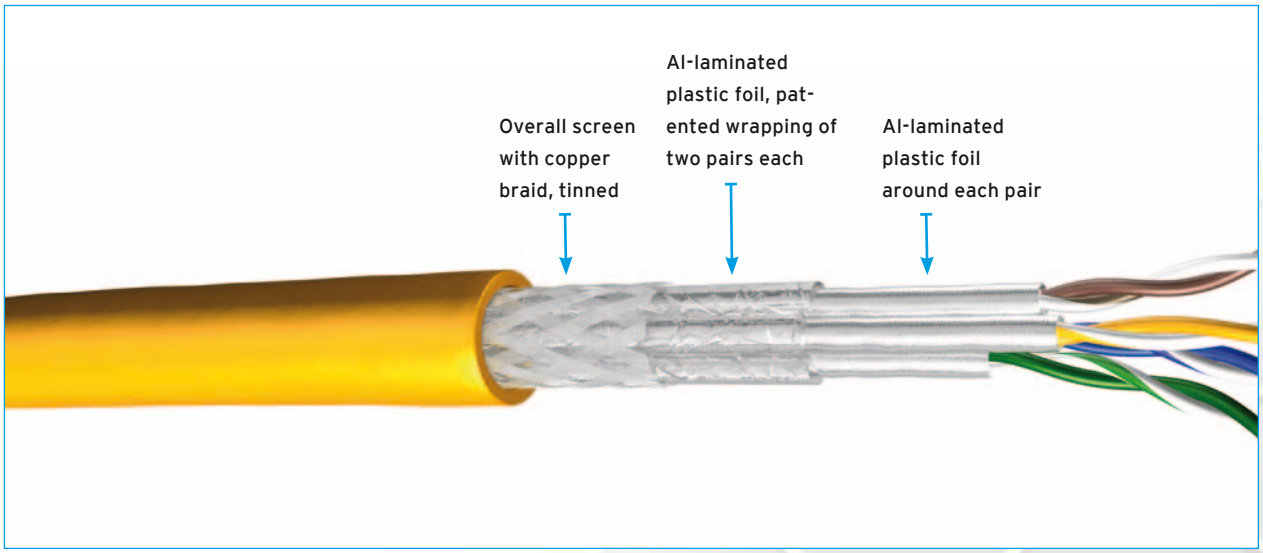
Unscreened conductor



Screened conductor

E = Electrical field
H = Magnetic field
A = Field of conductor loop
C = Grounding capacity
Ust = Interference
I = Screen current

Transfer impedance shows screening factor



Prevention with future prospects

For many years, flame retardance has been among the minimum requirements of indoor cables. Some PVC cables were often used in the past – PVC is less flammable than other materials, but they do not prevent a spread of fire. They release toxic and corrosive gases when burnt. The alternative: High-quality LSHF (Low-Smoke-Helogen-Free) materials with considerably improved properties in case of fire.

Protecting LSHF sheath

All UC cables are also available with halogenfree and flame retardant LSHF sheath. Excellent materials guarantee best electrical and mechanical properties of the cable.

The ability of our cables to avoid a spread of fire is documented by two standardized test methods: The fire characteristics of a single cable is determined according to IEC 60332-1. Test method C of IEC 60332-3-24 tests the characteristics of cable bundles. These tests are performed under realistic conditions in the field of structured cabling in buildings, e.g. in the distribution room or void. All our UC cables with LSHF-FR sheath fully comply with this significantly stricter standard (test method C).

It is dependent on the respective building or field of application whether to decide for a data transmission cable according to test method B or C. In case of any doubt, however, security ranks first and you should prefer the data cable with the flame retardant properties.

Improved fire protection characteristics

- No spread of (fire propagation), e.g. transmission of the local fire alongside the cables
- No emission of corrosive gases, possibly creating acid with extinguishing water
- Very low smoke development
- No Dioxin in the fire remains
- Considerably low toxicology of fire gases

Fire Protection

Fire characteristics	International standard	Data cable with PVC sheath	UC-Data cable with LSHF-FR sheath
Specific fire characteristics/fire propagation of a single piece of cable	IEC 60332-1	✔	✔
Fire propagation of a cable bundle	IEC 60332-3 Cat. C		✔
Corrosivity of fire gases	IEC 60754-2		✔
Measurement of smoke density	IEC 61034-1		✔

Test method C passed

A cable bundle is exposed to a 20kW flame for 20 minutes in a 4 meter high cabinet. The cables burn within the range of the propane gas flame (up to 1 meter), however, the cable bundle extinguishes itself and the remaining cable length remains without damage: No fire propagation, no excessive smoke development which would, in case of emergency, obstruct chances to escape. For comparison: Under the same conditions, some PVC cables burn completely within 5 minutes over the entire length.

Safety

Highest precautionary measures as to the cabling apply at crowded places (e.g. hospitals, airports, schools, department stores, hotels), in buildings with a high concentration of commodity values and wherever a breakdown would involve high expenses (e.g. industrial plants, power stations, EDP centres, banks) as well as in alarm, signal and control sytems.

Material of the future

Currently, the application of fluorinated polymers as insulation material is under discussion. It is known for its extremely high thermal stability and flame retardance. However, in case of emergency this material releases highly toxic and corrosive fire gases despite the considerably improved fire resistance compared to PVC. Also in future, only LSHF materials represent a responsible alternative.

UC MULTIMEDIA 1500
SS22 6FOILS

Electrical properties

UC300 26 Cat.5e U/UTP

Patch Cable

Transmission performance							EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation**	dB	0,3	0,9	3,0	4,4	4,8	Loop resistance Ω/km	≤ 260	Overall diameter mm	5,2
NEXT	dB	71,0	56,0	41,0	35,0	34,0	NVP*** %	ca. 67	Weight kg/km	25
PS-NEXT	dB	68,0	53,0	38,0	32,0	31,0	Capacitance	nF/km nom. 48	Fire load MJ/km	324
PS-ELFEXT	dB	65,0	45,0	25,0	17,0	13,0			Bending radius	
									with load	8xD
									without load	4xD
									Tensile force	N 55

UC300 24 Cat.5e U/UTP

Installation Cable

Transmission performance							EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation*	dB	1,9	6,0	19,8	29,2	32,0	Loop resistance Ω/km	≤ 165	Overall diameter mm	5,0
NEXT	dB	71,0	56,0	41,0	35,0	34,0	NVP*** %	ca. 67	Weight kg/km	35
PS-NEXT	dB	68,0	53,0	38,0	32,0	31,0	Capacitance	nF/km nom. 48	Fire load MJ/km	336
ACR	dB	69,1	50,0	21,2	5,8	2,0			Bending radius	
PS-ACR	dB	63,1	47,0	18,2	2,8	-1,2			with load	8xD
PS-ELFEXT	dB	65,0	45,0	25,0	17,0	13,0			without load	4xD
									Tensile force	N 100

UC300 S24 Cat.5e F/UTP

Installation Cable

Transmission performance							EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation*	dB	1,9	6,0	19,8	29,2	32,0	Loop resistance Ω/km	≤ 190	Overall diameter mm	5,9
NEXT	dB	71,0	56,0	41,0	35,0	34,0	NVP*** %	ca. 67	Weight kg/km	37
PS-NEXT	dB	68,0	53,0	38,0	32,0	31,0	Capacitance	nF/km nom. 48	Fire load MJ/km	396
ACR	dB	69,1	50,0	21,2	5,8	1,8	Kopplungswiderstand	mΩ/m	Bending radius	
PS-ACR	dB	66,1	47,0	18,2	2,8	-1,2	bei 1 MHz	50	with load	8xD
PS-ELFEXT	dB	65,0	45,0	25,0	17,0	13,0	bei 10 MHz	100	without load	4xD
							bei 30 MHz	200	Tensile force	N 80

UC300 HS24 Cat.5e SF/UTP

Installation Cable

Transmission performance							EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation*	dB	1,9	6,0	19,8	29,2	32,0	Loop resistance Ω/km	≤ 190	Overall diameter mm	6,4
NEXT	dB	71,0	56,0	41,0	35,0	34,0	NVP*** %	ca. 67	Weight kg/km	47
PS-NEXT	dB	68,0	53,0	38,0	32,0	31,0	Capacitance	nF/km nom. 48	Fire load MJ/km	433
ACR	dB	69,1	50,0	21,2	5,8	2,0	Kopplungswiderstand	mΩ/m	Bending radius	
PS-ACR	dB	66,1	47,0	18,2	2,8	-1,0	bei 1 MHz	20	with load	8xD
PS-ELFEXT	dB	65,0	45,0	25,0	17,0	13,0	bei 10 MHz	20	without load	4xD
							bei 30 MHz	30	Tensile force	N 120
							bei 100 MHz	60		

Duplex Cable available on request.

UC400 26 Cat.6 U/UTP

Patch Cable

Transmission performance								EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	400	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation**	dB	0,30	0,90	3,00	4,90	5,20	6,00	Loop resistance Ω/km	≤ 195	Overall diameter mm	5,6
NEXT	dB	74,0	60,0	45,0	39,0	38,0	37,0	NVP*** %	ca. 67	Weight kg/km	34
PS-NEXT	dB	71,0	56,0	42,0	36,0	35,0	34,0	Capacitance	nF/km nom. 52	Fire load MJ/km	342
PS-ELFEXT	dB	66,0	46,0	26,0	19,0	18,0	17,0			Bending radius	
										with load	8xD
										without load	4xD
										Tensile force	N 70

UC400 S27 Cat.6 U/FTP

Patch Cable

Transmission performance								EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	400	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation*	dB	0,3	1,0	3,3	5,1	5,6	6,5	Loop resistance Ω/km	≤ 340	Overall diameter mm	5,7
NEXT	dB	87,0	72,0	57,0	51,0	50,0	48,0	NVP*** %	ca. 79	Weight kg/km	26
PS-NEXT	dB	84,0	69,0	54,0	48,0	47,0	45,0	Capacitance	nF/km nom. 43	Fire load MJ/km	342
PS-ELFEXT	dB	72,0	72,0	52,0	44,0	42,0	40,0	Kopplungswiderstand	mΩ/m	Bending radius	
								bei 1 MHz	50	with load	8xD
								bei 10 MHz	100	without load	4xD
								bei 30 MHz	200	Tensile force	N 70

UC400 23 Cat.6 U/UTP

Installation Cable

Transmission performance								EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	400	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation*	dB	1,9	5,6	19,0	32,0	36,0	42,0	Loop resistance Ω/km	≤ 176	Overall diameter mm	6,2
NEXT	dB	81,0	74,0	48,0	44,0	41,0	39,0	NVP*** %	ca. 68	Weight kg/km	40
PS-NEXT	dB	78,0	71,0	45,0	41,0	38,0	36,0	Capacitance	nF/km nom. 48	Fire load MJ/km	329
ACR	dB	79,0	68,0	29,0	12,0	5,0	-3,0			Bending radius	
PS-ACR	dB	76,0	65,0	26,0	9,0	2,0	-6,0			with load	8xD
PS-ELFEXT	dB	79,0	59,0	39,0	31,0	29,0	27,0			without load	4xD
										Tensile force	N 100

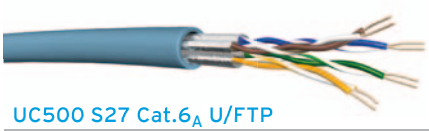
UC400 S23 Cat.6 U/FTP

Installation Cable

Transmission performance								EMC properties		Mechanical properties	
	MHz	1	10	100	250	300	400	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation*	dB	1,8	5,4	17,4	28,8	30,9	38,3	Loop resistance Ω/km	≤ 145	Overall diameter mm	7,3
NEXT	dB	100	100	100	90	89	87	NVP*** %	ca. 75	Weight kg/km	45
PS-NEXT	dB	97	97	97	97	86	84	Capacitance	nF/km nom. 45	Fire load MJ/km	542
ACR	dB	98	95	83	62	58	48	Kopplungswiderstand	mΩ/m	Bending radius	
PS-ACR	dB	95	92	80	59	55	45	bei 1 MHz	50	with load	8xD
PS-ELFEXT	dB	102	94	74	66	64	61	bei 10 MHz	100	without load	4xD
								bei 100 MHz	1000	Tensile force	N 100

* Nominal value measured at 100 m (Velocity of Propagation) | ** Nominal value Patch Cable measured at 10 m |
*** NVP = Nominal | **** LSOH

Electrical properties

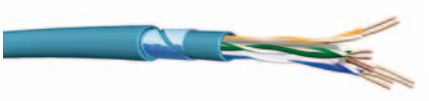


UC500 S27 Cat.6$_A$ U/FTP

Patch Cable

Transmission performance								
	MHz	1	10	100	250	300	400	500
Attenuation**	dB	0,3	1,0	3,3	5,1	5,6	6,5	7,3
NEXT	dB	87,0	72,0	57,0	51,0	50,0	48,0	46,0
PS-NEXT	dB	84,0	69,0	54,0	48,0	47,0	45,0	43,0
PS-ELFEXT	dB	72,0	72,0	52,0	44,0	42,0	40,0	37,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 340	Overall diameter mm	5,7
NVP*** %	ca. 79	Weight kg/km	26
Capacitance	nF/km nom. 43	Fire load MJ/km	342
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	50	with load	8xD
bei 10 MHz	100	without load	4xD
bei 30 MHz	200	Tensile force	N 50

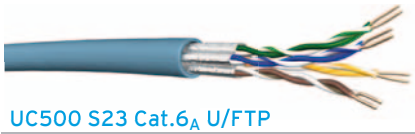


UC500 23 Cat.6$_A$ U/UTP

Installation Cable

Transmission performance								
	MHz	1	10	100	250	300	400	500
Attenuation**	dB	2,0	5,9	19,0	31,1	34,2	40,0	45,3
NEXT	dB	75,3	60,3	45,3	39,3	38,1	36,3	34,8
PS-NEXT	dB	72,3	57,3	42,3	36,3	35,1	33,3	31,8
PS-ELFEXT	dB	65,0	45,0	25,0	17,0	15,5	13,0	11,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 145	Overall diameter mm	8,9
NVP*** %	ca. 67	Weight kg/km	73
Capacitance	nF/km nom. 48	Fire load MJ/km	1075
		Bending radius	
		with load	8xD
		without load	4xD
		Tensile force	N 100



UC500 S23 Cat.6$_A$ U/FTP

Installation Cable

Transmission performance								
	MHz	1	10	100	250	300	400	500
Attenuation**	dB	1,8	5,4	17,4	28,1	30,9	38,3	44,8
NEXT	dB	100,0	100,0	100,0	90,0	89,0	87,0	85,0
PS-NEXT	dB	97,0	97,0	97,0	87,0	86,0	84,0	82,0
ACR	dB	98,0	95,0	83,0	62,0	58,0	48,0	40,0
PS-ACR	dB	95,0	92,0	80,0	59,0	55,0	45,0	37,0
PS-ELFEXT	dB	102 ,0	94,0	74,0	66,0	64,0	61,0	58,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 176	Overall diameter mm	6,9
NVP*** %	ca. 79	Weight kg/km	45
Capacitance	nF/km nom. 45	Fire load MJ/km	493
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	≤ 50	with load	8xD
bei 10 MHz	≤ 100	without load	4xD
bei 30 MHz	1000	Tensile force	N 100

UC500 AS23 Cat.6$_A$ F/FTP

Installation Cable

Transmission performance								
	MHz	1	10	100	250	300	400	500
Attenuation**	dB	1,8	5,4	17,4	28,1	30,9	38,3	44,8
NEXT	dB	100,0	100,0	100,0	90,0	89,0	87,0	85,0
PS-NEXT	dB	97,0	97,0	97,0	87,0	86,0	84,0	82,0
ACR	dB	98,0	95,0	83,0	62,0	58,0	48,0	40,0
PS-ACR	dB	95,0	92,0	80,0	59,0	55,0	45,0	37,0
PS-ELFEXT	dB	102 ,0	94,0	74,0	66,0	64,0	61,0	58,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 176	Overall diameter mm	7,1
NVP*** %	ca. 79	Weight kg/km	47
Capacitance	nF/km nom. 43	Fire load MJ/km	501
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	20	with load	8xD
bei 10 MHz	50	without load	4xD
bei 30 MHz	100	Tensile force	N 100

UC900 SS27 Cat.7 S/FTP

Patch Cable

Transmission performance									
	MHz	1	10	100	250	300	450	600	1000
Attenuation**	dB	0,3	1,0	3,2	5,1	5,6	6,9	7,9	10,2
NEXT	dB	90,0	90,0	87,0	81,0	80,0	77,0	75,0	71,0
PS-NEXT	dB	87,0	87,0	84,0	78,0	77,0	74,0	72,0	68,0
PS-ELFEXT	dB	77,0	77,0	57,0	49,0	47,0	44,0	41,0	37,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 340	Overall diameter mm	5,9
NVP*** %	ca. 79	Weight kg/km	39
Capacitance	nF/km nom. 43	Fire load MJ/km	349
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	25	with load	8xD
bei 10 MHz	15	without load	4xD
bei 30 MHz	30	Tensile force	N 100

UC900 HS23 Cat.7 S/FTP

Installation Cable

Transmission performance									
	MHz	1	10	100	250	300	450	600	1000
Attenuation**	dB	1,8	5,4	17,4	28,1	30,9	38,3	44,8	63,1
NEXT	dB	100,0	100,0	100,0	90,0	89,0	87,0	85,0	80,0
PS-NEXT	dB	97,0	97,0	97,0	87,0	86,0	84,0	82,0	77,0
ACR	dB	98,0	95,0	83,0	62,0	58,0	48,0	40,0	17,0
PS-ACR	dB	95,0	92,0	80,0	59,0	55,0	45,0	37,0	14,0
PS-ELFEXT	dB	105,0	94,0	74,0	66,0	64,0	61,0	58,0	54,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 165	Overall diameter mm	7,4
NVP*** %	ca. 79	Weight kg/km	54,5
Capacitance	nF/km nom. 43	Fire load MJ/km	590
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	20	with load	8xD
bei 10 MHz	30	without load	4xD
bei 100 MHz	200	Tensile force	N 110

UC900 SS23 Cat.7 S/FTP

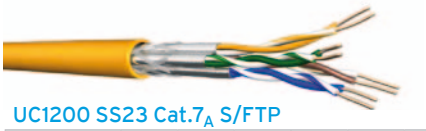
Installation Cable

Transmission performance									
	MHz	1	10	100	250	300	450	600	1000
Attenuation**	dB	1,8	5,4	17,4	28,1	30,9	38,3	44,8	63,1
NEXT	dB	100,0	100,0	100,0	90,0	89,0	87,0	85,0	80,0
PS-NEXT	dB	97,0	97,0	97,0	87,0	86,0	84,0	82,0	77,0
ACR	dB	98,0	95,0	83,0	62,0	58,0	48,0	40,0	17,0
PS-ACR	dB	95,0	92,0	80,0	59,0	55,0	45,0	37,0	14,0
PS-ELFEXT	dB	105,0	94,0	74,0	66,0	64,0	61,0	58,0	54,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 150	Overall diameter mm	7,5
NVP*** %	ca. 79	Weight kg/km	75
Capacitance	nF/km nom. 43	Fire load MJ/km	585
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	5	with load	8xD
bei 10 MHz	5	without load	4xD
bei 100 MHz	20	Tensile force	N 340

* Nominal value measured at 100 m (Velocity of Propagation) | ** Nominal value Patch Cable measured at 10 m |
*** NVP = Nominal | **** LSOH

Electrical properties

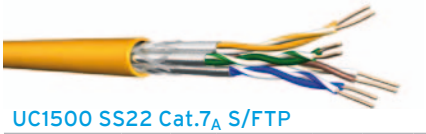


UC1200 SS23 Cat.7$_A$ S/FTP

Installation Cable

Transmission performance									
	MHz	1	10	100	250	300	600	1000	1200
Attenuation**	dB	1,8	5,4	17,4	28,1	30,9	44,8	58,4	65,2
NEXT	dB	100,0	100,0	100,0	90,0	87,0	85,0	82,0	82,0
PS-NEXT	dB	97,0	97,0	97,0	87,0	86,0	82,0	79,0	79,0
ACR	dB	98,0	95,0	83,0	87,0	86,0	40,0	24,0	17,0
PS-ACR	dB	95,0	92,0	80,0	59,0	55,0	37,0	21,0	14,0
PS-ELFEXT	dB	105,0	94,0	74,0	66,0	64,0	58,0	54,0	40,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 133	Overall diameter mm	7,8
NVP*** %	ca. 79	Weight kg/km	65
Capacitance	nF/km nom. 44	Fire load MJ/km	589
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	5	with load	8xD
bei 10 MHz	5	without load	4xD
bei 100 MHz	20	Tensile force	N 100



UC1500 SS22 Cat.7$_A$ S/FTP

Installation Cable

Transmission performance										
	MHz	1	10	100	250	600	1000	1200	1400	1500
Attenuation**	dB	1,7	5,1	16,3	25,8	40,2	52,1	57,1	61,3	64,1
NEXT	dB	100	100	100	90	85	83	83	81	80
ACR	dB	98	95	83	64	45	31	26	21	16
PS-NEXT	dB	97	97	97	87	82	80	80	78	77
PS-ACR	dB	95	92	80	61	42	28	23	18	13
PS-ELFEXT	dB	97	92	77	66	42	37	32	27	25

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 128	Overall diameter mm	7,9
NVP*** %	ca. 79	Weight kg/km	81
Capacitance	nF/km nom. 43	Fire load MJ/km	642
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	20	with load	8xD
bei 10 MHz	30	without load	4xD
bei 100 MHz	200	Tensile force	N 340

UC1500 HS22 Cat.7$_A$ S/FTP

Installation Cable

Transmission performance										
	MHz	1	10	100	250	600	1000	1200	1400	1500
Attenuation**	dB	1,7	5,1	16,3	25,8	40,2	52,1	57,1	61,3	64,1
NEXT	dB	100	100	100	90	85	83	83	81	80
ACR	dB	98	95	83	64	45	31	26	21	16
PS-NEXT	dB	97	97	97	87	82	80	80	78	77
PS-ACR	dB	95	92	80	61	42	28	23	18	13
PS-ELFEXT	dB	97	92	77	66	42	37	32	27	25

EMC properties		Mechanical properties	
Impedance Ω	100 ± 5	Fire protection characteristics****	
Loop resistance Ω/km	≤ 128	Overall diameter mm	7,9
NVP*** %	ca. 79	Weight kg/km	81
Capacitance	nF/km nom. 43	Fire load MJ/km	642
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	20	with load	8xD
bei 10 MHz	30	without load	4xD
bei 100 MHz	200	Tensile force	N 340

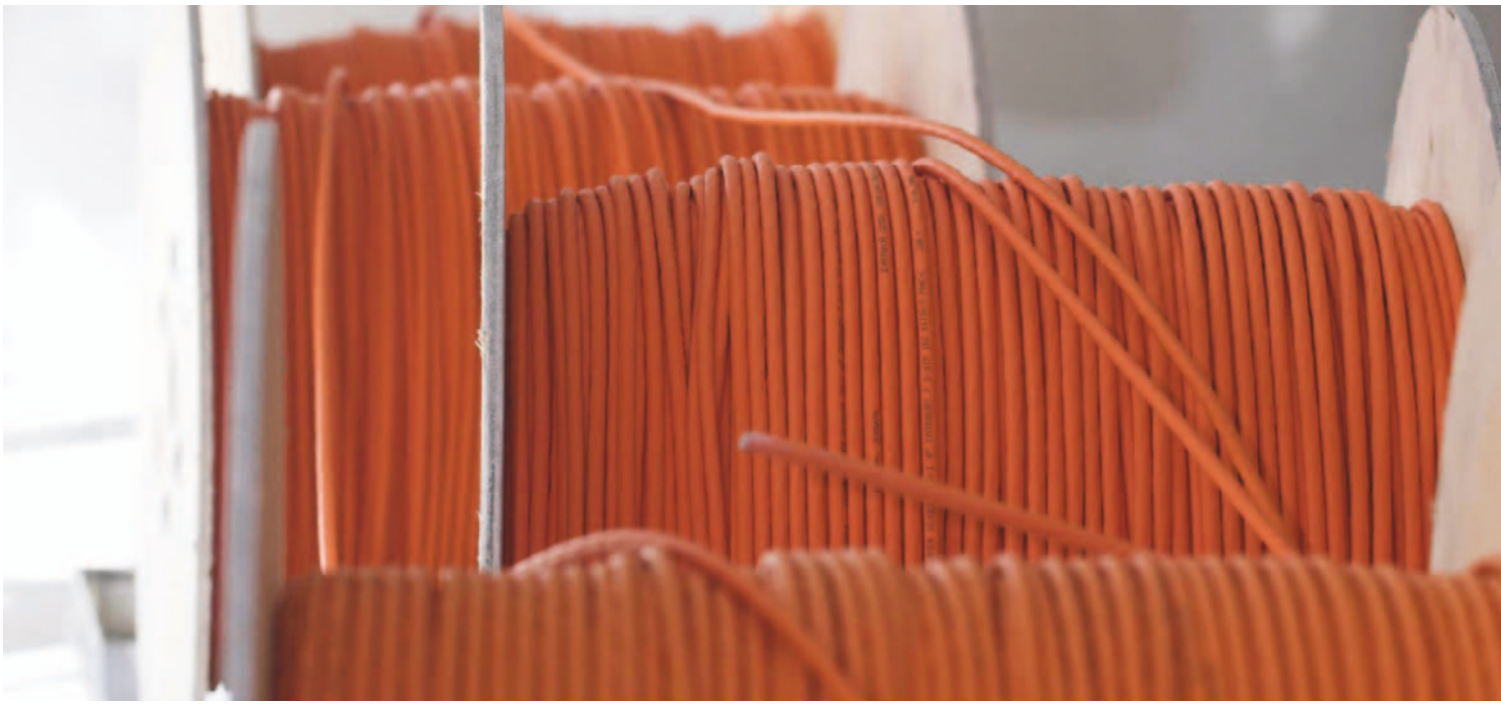
UC MULTIMEDIA 1500 SS22 6 FOILS S/FTP

Installation Cable

Transmission performance								
	MHz	1	10	100	250	600	1000	1500
Attenuation**	dB	1,7	5,1	16,3	25,8	40,2	52,1	64,1
NEXT	dB	115,0	115,0	110,0	105,0	100,0	96,0	94,0
PS-NEXT	dB	112,0	112,0	108,0	102,0	97,0	93,0	91,0
ACR	dB	113,0	110,0	95,0	80,0	60,0	44,0	30,0
PS-ACR	dB	110,0	107,0	92,0	77,0	57,0	41,0	27,0
PS-ELFEXT	dB	102,0	94,0	74,0	66,0	58,0	54,0	50,0

EMC properties		Mechanical properties	
Impedance Ω	100 ± 15	Fire protection characteristics****	
Loop resistance Ω/km	≤ 110	Overall diameter mm	8,9
NVP*** %	ca. 79	Weight kg/km	86
Capacitance	nF/km nom. 43	Fire load MJ/km	746
Kopplungswiderstand	mΩ/m	Bending radius	
bei 1 MHz	5	with load	8xD
bei 10 MHz	5	without load	4xD
bei 100 MHz	20	Tensile force	N 380

* Nominal value measured at 100 m (Velocity of Propagation) | ** Nominal value Patch Cable measured at 10 m |
*** NVP = Nominal | **** LSOH

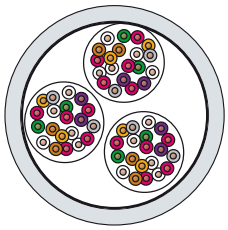


Product scope UC Data Transmission Cable

Cable type	Screening	Category	Application
UC300 24 Cat.5e U/UTP	U/UTP	Cat.5e	Installation Cable
UC300 S24 Cat.5e F/UTP	F/UTP	Cat.5e	Installation Cable
UC300 HS24 Cat.5.e SF/UTP	SF/UTP	Cat.5e	Installation Cable
UC300 26 Cat.5e U/UTP	U/UTP	Cat.5e	Patch Kabel
UC300 S26 Cat.5e F/UTP	F/UTP	Cat.5e	Patch Kabel
UC300 HS26 Cat.5e SF/UTP	SF/UTP	Cat.5e	Patch Kabel
UC400 23 Cat.6 U/UTP	U/UTP	Cat.6	Installation Cable
UC400 S23 Cat.6 U/FTP *	U/FTP	Cat.6	Installation Cable
UC400 HS23 Cat.6 S/FTP *	S/FTP	Cat.6	Installation Cable
UC400 26 Cat.6 U/UTP	U/UTP	Cat.6	Patch Kabel
UC400 S27 Cat.6 U/FTP *	U/FTP	Cat.6	Patch Kabel
UC500 23 Cat.6_A U/UTP *	U/UTP	Cat.6_A	Installation Cable
UC500 S23 Cat.6_A U/FTP *	U/FTP	Cat.6_A	Installation Cable
UC500 AS23 Cat.6_A F/FTP *	F/FTP	Cat.6_A	Installation Cable
UC500 27 Cat.6_A U/UTP *	U/UTP	Cat.6_A	Patch Kabel
UC500 S27 Cat.6_A U/FTP *	U/FTP	Cat.6_A	Patch Kabel
UC900 HS23 Cat.7 S/FTP	S/FTP	Cat.7	Installation Cable
UC900 SS23 Cat.7 S/FTP	S/FTP	Cat.7	Installation Cable
UC900 SS27 Cat.7 S/FTP	S/FTP	Cat.7	Patch Kabel
UC1200 SS23 Cat.7_A S/FTP	S/FTP	Cat.7_A	Installation Cable
UC1200 HS23 Cat.7_A S/FTP	S/FTP	Cat.7_A	Installation Cable
UC1500 SS22 Cat.7_A S/FTP	S/FTP	Cat.7_A	Installation Cable
UCUC1500 HS22 Cat.7_A S/FTP	S/FTP	Cat.7_A	Installation Cable
UC MULTIMEDIA 1500 SS23 6FOILS S/FTP *	S/FTP	MULTIMEDIA	Installation Cable
UC MULTIMEDIA 1500 SS22 6FOILS S/FTP *	S/FTP	MULTIMEDIA	Installation Cable

*** Draka patent designs**

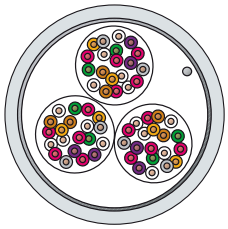
Electrical properties



Transmission performance						EMC properties		Mechanical properties	

Multipair Kabel according to Cat.3 U/UTP
J-2YY/H 25/50/100x2x0,52 (AWG24)

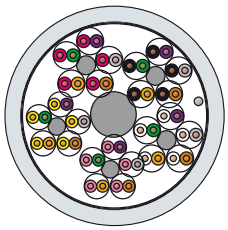
	MHz	1	4	10	16	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation**	dB	26,0	56,0	98,0	131,0	Loop resistance Ω/km	≤ 186	Overall diameter mm	12,9
NEXT	dB	41,0	32,0	26,0	23,0	Capacitance	nF/km nom. 45	Weight kg/km	162
								Bending radius	
								with load	8xD
								without load	4xD
								Tensile force	N 500



Transmission performance						EMC properties		Mechanical properties	

Multipair Kabel according to Cat.3 F/UTP
J-2Y(St)Y/H 25/50/100x2x0,52 (AWG24)

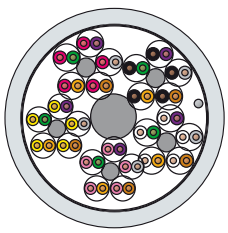
	MHz	1	4	10	16	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation**	dB	26,0	56,0	98,0	131,0	Loop resistance Ω/km	≤ 186	Overall diameter mm	12,9
NEXT	dB	41,0	32,0	26,0	23,0	Capacitance	nF/km nom. 45	Weight kg/km	162
								Bending radius	
								with load	8xD
								without load	4xD
								Tensile force	N 500



Transmission performance						EMC properties		Mechanical properties	

Multipair Kabel according to Cat.5e U/UTP
S-2YY/H 25/50/100x2x0,52 (AWG24)

	MHz	1	10	100	125	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation**	dB	1,9	6,0	19,8	22,3	Loop resistance Ω/km	≤ 190	Overall diameter mm	15,5
NEXT	dB	71,0	56,0	41,0	40,0	NVP*** %	ca. 67	Weight kg/km	190
PS-NEXT	dB	68,0	53,0	38,0	37,0	Capacitance	nF/km nom. 48	Fire load MJ/km	2250
PS-ELFEXT	dB	65,0	45,0	25,0	23,0			Bending radius	
								with load	8xD
								without load	4xD
								Tensile force	N 500



Transmission performance						EMC properties		Mechanical properties	

Multipair Kabel according to Cat.5e F/UTP
S-2Y(St)Y/H 25/50/100x2x0,52 (AWG24)

	MHz	1	10	100	125	Impedance Ω	100 ± 5	Fire protection characteristics****	
Attenuation**	dB	1,9	6,0	19,8	22,3	Loop resistance Ω/km	≤ 190	Overall diameter mm	15,5
NEXT	dB	71,0	56,0	41,0	40,0	NVP*** %	ca. 67	Weight kg/km	190
PS-NEXT	dB	68,0	53,0	38,0	37,0	Capacitance	nF/km nom. 48	Fire load MJ/km	2250
PS-ELFEXT	dB	65,0	45,0	25,0	23,0			Bending radius	
								with load	8xD
								without load	4xD
								Tensile force	N 500

* Nominal value measured at 100 m (Velocity of Propagation) | ** Nominal value Patch Cable measured at 10 m |
*** NVP = Nominal | **** LSOH

Draka Communication gets the green light

On 1st July 2006, the final stage of "ElektroG" came into effect. The law which governs the marketing, return and environmentallycompatible disposal of electrical and elec - tronic equipment serves the implementation in Germany of the two EC directives RoHS and WEEE.

Two directives, one law and a great deal of uncertainty in the industry. For our customers, on principle, the question is: are cables from Draka Comteq classified as electrical and electronic equipment in the sense of ElektroG or the RoHS and WEEE directives? To cut a long story short: all cable solutions from Draka Comteq are not "equipment" in the sense of the directives and can thus be sold and used without hesitation. This conclusion is also reached by an independent expert who confirms the result with a certificate.

The Draka Comteq documentation provides further information on this theme, explains the background and shows the full wording of the certificate. The leaflet can be obtained free of charge, simply send an e-mail to: koeln.info@draka.com.

UMWELT KANZLEI
CONSULTING EXPERTISEN PRÜFUNGEN
DR. HANS-BERNHARD BREEN

Bescheinigung über die Zuordnung von Produkten nach ElektroG

Unter Anwendung der Kriterien des ElektroG[1] und der BMU-Auslegungshinweise[2] konnte plausibel begründet werden, dass die von der Firma

Draka

Draka Comteq Germany GmbH & Co. KG, Piccoloministr. 2, D 51063 – Köln

in Verkehr gebrachten **Kabel** nicht als „Geräte" unter das ElektroG, und somit nicht unter die Richtlinien WEEE und RoHS fallen.

Die vorgenommene Zuordnung schließt jedoch nicht aus, dass **Kabel** der Firma Draka Comteq Germany GmbH & Co. KG als Komponenten/Bauteile bei der Herstellung von Elektrogeräten nach ElektroG verwendet werden und damit den Produktanforderungen des Herstellers nach RoHS-Richtlinie entsprechen müssen.

Nach den BMU-Auslegungshinweisen zufolge fallen folgende Produkte unter die Ausnahmekriterien des Regelwerks:

- Kabel, soweit in Gebäuden installiert als Teil der technischen Gebäudeausrüstung (BMU Nr. 2.5.3)
- Leitungen, soweit eigens zum Einbau in Fahrzeugen bestimmt (BMU Nr. 2.5.1)
- Patch - Leitungen, soweit sie keine eigenständige Funktion besitzen und damit kein „Gerät" sind (BMU Nr. 3.1)
- „Basynet", soweit diese Produkte keine eigenständige Funktion besitzen und damit kein „Gerät" sind (BMU Nr. 3.1)

Die Zuordnung zu den Ausnahmekriterien erfolgte im Rahmen eines Beratungsgespräches am 24.03.2006 und ist im Zusammenhang des Berichts fme-020/06-BE-29032006 begründet worden.

Sarstedt, 10.04.2006

Dipl.-Ing. Thomas Meyer

Quality and Environment

LGA InterCert

Zertifikat

Draka

Draka Comteq Germany GmbH & Co. KG
Unternehmensbereich Multimedia Cable

Piccoloministraße 2
D - 51063 Köln

Wohlauer Straße 15
D - 90475 Nürnberg

Qualitätsmanagementsystem

DIN EN ISO 9001:2000

Quality management
DIN EN ISO 9001

COPY

DNV

DET NORSKE VERITAS

MANAGEMENT SYSTEM CERTIFICATE

Draka Comteq Norway AS

Arnes and Drammen
Norway

NS-EN ISO 14001 : 2004

Development, design, manufacturing and sales of
data cables and copper wires.

Environmental management
DIN EN ISO 14001

3P THIRD PARTY TESTING

Compliance Statement

Screened Category 7
ISO/IEC, EN & Enhanced TIA/EIA
Communication Cable

Draka Comteq Identification Cat 7 S/FTP LSHF - 1001032
Category 7, Individual Foil and Overall Braid Screened
100 Ω, 4 Twisted Pairs, 23 AWG, Flame Retardant, LS0H, Copper Cable

Draka Comteq UK, Ltd.
Crowther Road, Washington
Tyne and Wear, NE8 0AQ, England

Compliance Statement No. 108419

Hoersholm, 7th August 2008
Ole Laubertsen
Test Responsible

Hoersholm, 7th August 2008
Poul Villien
Coordinating Manager

Independent Testing - For End User Confidence

3P-Certificate

Type Approval Certificate

Germanischer Lloyd

Certificate No. 33 778 - 06 HH

Company: Draka Comteq Germany GmbH & Co. KG
Piccoloministr. 2
51063 Köln, GERMANY

Product Description: Halogen free foam-PE insulated and FRNC sheathed twisted pairs data transmission cables

Type: UC900 S527 Cat.7; UC900 S523 Cat.7; UC1500 S523 Multimedia (Cat.7)

Environmental Category: None

Technical Data / Range of Application: UC900 S527 Cat.7
Conductor: Stranded bare copper wire, (AWG 27/7)
Insulation: Foam skin PE diameter 0.58 mm
Twisting: 2 cores to the pair
Pair screen: Al-laminated plastic foil
Cable lay up: 4 pairs (PiMF) to the core
Screen: Copper braid, tinned
Sheath: FRNC, thermoplastic copolymer (SHF1)

Electrical properties: Loop resistance: ≤ 340 Ω /km
Mutal capacitance: Nom. 43 nF/km at 800 Hz
Character. impedance: 100 Ω
More properties according to Draka data sheet

Mechanical properties: Temperature range: -20°C to +60°C (operating)
Bending radius: ≥ 25 mm

Test Standard: EN 50173-1:2002; EN 50288-4-2:2003; IEC 11801:2002; IEC 61156-5:2002; IEC 60332-1:1993; IEC 60332-3-24:2000; IEC 60754-2:1997; IEC 61034:1997

Documents: Test report : Draka Comteq reference 2006035. SA_summary, dated of 19.09.2006

Remarks: None

Valid until: 2011-10-09

Page 1 of 2

File No. I-N 01

Hamburg, 2006-10-19

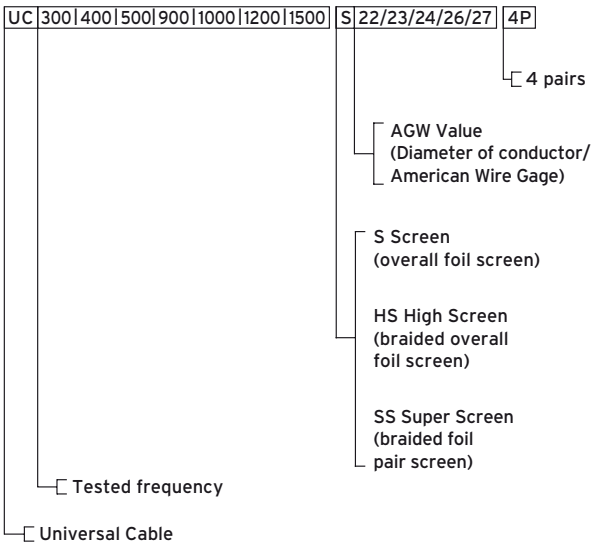
Type Approval Symbol GL

Germanischer Lloyd

Wolfgang Voß

Reinhard Förster

GL Certificate



100-Ω-data transmission cables according to:
ISO/IEC 11801 2nd ed. Cat.5e, Class D; Cat.6, Class E; Cat.6_A, Class E_A; Cat.7, Class F; Cat.7_A, Class G EIA/TIA 568 A; B.2-1

EN 50173 Cat.5e, Class D; Cat.6, Class E; Cat.6_A, Class E_A; Cat.7, Class F; Cat.7_A, Class G EIA/TIA 568 A; B.2-1

IEEE 802.3 an Cat.6_A, Class E_A, Cat.7_A, Class F_A

UC300 Universal Cable 100 MHz
according to ISO/IEC 11801 2nd ed./EN 50173

UC400 Universal Cable 250 MHz
according to ISO/IEC 11801 2nd ed./EN 50173

UC500 Universal Cable 500 MHz
according to IEEE 802.3 an

UC900 Universal Cable 900 MHz
according to ISO/IEC 11801 2nd ed./EN 50173

UC1200 Universal Cable 1200 MHz
according to ISO/IEC 11801 2nd ed./EN 50173

UC1500 Universal Cable 1200 MHz
according to ISO/IEC 11801 2nd ed./EN 50173

UC MULTIMEDIA
Universal Cable 1500 MHz
according to ISO/IEC 11801 2nd ed./EN 50173

Draka Communications – Cable in Copper and Optical Fibre Technology for:

- Office Communication
- Central Office Switching
- Home Networks
- Industry
- Studio
- CATV
- Long-distance networks
- Subscribers networks (FttX)
- Telecommunication networks
- Mobile telephone systems
- OPGW
- Signalling cables

We make communication technology work, by serving you in every way to realize your leading edge network solution

Draka Communications has offices and production facilities all over the world. To get in touch with us and find out how we can help you build your network, visit our website at www.draka.com/communications or contact us.

Denmark
Priorparken 833,
DK-2605 Broendby
Phone: +45 43 48 20 50
Telefax: +45 43 48 26 59
br.info@draka.com

Germany
Friedrichshagener Str. 29-36
D - 12555 Berlin
Phone: +49 30 65 485 760
Telefax: +49 30 65 485 602
berlin.info@draka.com

Germany*
Piccolomini str. 2
D - 51063 Köln
Phone: +49 221 67 70
Telefax: +49 221 67 73 890
koeln.info@draka.com
*) including: Switzerland

Finland*
Kimmeltie 1
FIN - 02110 Espoo
Phone: +358 10 56 61
Telefax: +358 10 56 63 394
fi-info@draka.com
*) including: The Baltic States, Poland, Ukraine, Belarus, Georgia and Armenia.

France
Le Sophocle - Parc de Algorithmes
9, Avenue du Marais
95100 Argenteuil
Phone: +33 1 34 34 41 30
Telefax: +33 1 30 76 40 12
dcf.sales@drakacomteq.com

Netherlands
(HQ – Comteq Cable Division)
De Boelelaan 7 – Building Officia I
NL-1083 HJ Amsterdam
Phone: +31 20 56 89 865
Telefax: +31 20 56 89 409
comteq.info@draka.com

Netherlands
(HQ - Comteq Fibre Division)
Zwaanstraat 1
NL-5651 CA Eindhoven
Phone: +31 40 295 87 00
Telefax: +31 40 295 87 10
fibresales@draka.com

Netherlands*
Zuidelijk Halfrond 11
NL-2801 DD Gouda
Phone: +31 182 59 21 00
Telefax: +31 182 59 22 00
nl.dct.info@draka.com
*) including: Belgium and Luxembourg

Norway*
Kjerraten 16
3013 Drammen
Phone: +47 32 24 90 00
Telefax: +47 32 24 91 16
*) including: Sweden and Iceland

Austria*
Trillergasse 8
A-1210 Wien
Phone: +43 1 294 0095 14
Telefax: +43 1 294 0095 97
ferdinand.eder@draka.com
*) including: Hungary, Czech Republic, Slovakia, Slovenia, Albania, Macedonia, Romania and Bulgaria.

Romania*
Draka Iberica Plant
Romanian Representative Office
Calea Floreasca, nr 169A, Floor 4
Regus Biz Center, code 014472
Sector 1, Bucharest
Phone: +40 3 18 60 22 65
Telefax: +40 3 18 60 21 00
vladimiro.doicaru@draka.com
*) including: Greece and Moldavia

Russia
Neva Cables Ltd.
8th Verkhny pereulok, 10,
RUS-St. Petersburg, 194292
Phone: +7 812 592 84 79
Telefax: +7 812 592 77 79
office@nevacables.ru

Spain
Av. de Bilbao 72
E-39.600 Maliaño - Cantabria
Phone: +34 942 24 71 00
Telefax: +34 942 24 71 14
ana.sierra@draka.com

Spain*
Can Vinyalets núm. 2
E-08130 Sta. Perpetua de la Mogoda
Barcelona
Phone: +34 935 74 83 83
Telefax: +34 935 60 13 42
josepmaria.pareras@draka.com
*) including: Portugal and Italy

Turkey
Haktan İş Merkezi No:39 K:2
Setüstü Kabataş
Istanbul
Phone: +90 212 393 77 00
Telefax: +90 212 393 77 62
tpks@prysmiangroup.com

United Kingdom*
Crowther Road,
Crowther Industrial Estate,
Washington, Tyne and Wear,
NE38 0AQ
Phone: +44 191 415 50 00
Telefax: +44 191 415 82 78
comtequk@draka.com
*) including: Ireland

Draka

www.prysmian.com.tr