PATCH CABLE

CONNECT TO THE FUTURE
With patch cable solutions –
powerful and flexible for
tomorrow's infrastructure.

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WITH PATCH CABLE
SOLUTIONS –
POWERFUL &
FLEXIBLE
FOR TOMORROW'S
INFRASTRUCTURE.

THE IMPORTANCE
OF RELIABLE CONNECTIVITY

Digitisation and globalisation have had a considerable effect on the world of work, new ways of working are eclipsing older methods more rapidly than ever before. Previously, process and office automation played a rather subordinate role and the scope of data volumes and applications were very limited, everything was usually managed from a single server room located on-site. Super-regional and global organisations used leased lines and paths for the exchange of their data for a limited period.

This has changed significantly as agility and flexibility become more important in business processes and the IT landscape as companies can no longer be limited in time and place during the course of the digital transformation. Work 4.0 and Smart Working are the visible signs of this change. Digital, intelligent workflows, networked company-wide processes, data and documents are distributed worldwide in a matter of seconds, creating a huge amount of important data every single second. Cloud applications offer companies the increased availability of larger data capacity with a simple front-end backed by lower costs per user, or application, than is possible using traditional technologies. This reduces risks to businesses in terms of capital requirements, dependency, implementation, operation and maintenance. Shifting from on-site to off-site IT infrastructure allows for easy scaling to meet future requirements and processes to all companies, regardless of size.

This shift inevitably has consequences. One of consequences is the need to focus on connectivity. Any IT or AV architecture that is based off-site and uses cloud computing but does not use high-quality, reliable connections is risking billions of megabytes of data and processes. High performance requirements in data centres demands state-of-the-art products, especially when talking about cable infrastructure. Copper-based connectivity is a flexible and economical solution that still offers a large amount of bandwidth and scalability to meet current, and future, requirements.

Patch cables deserve special attention as they represent the lifelines of modern communication infrastructure. Their reliability therefore stands or falls by the function and supply of entire company locations and the future digitalisation of company processes; because efficient cabling is the physical basis for high-speed applications in the office and building cabling sector. Patch cables are business critical to many company operations and can easily be integrated with new and emerging technologies, however a single unreliable patch cable can jeopardize all communication between servers with mission-critical data and functions, resulting in huge losses. These losses can be easily avoided by selecting high quality and high-performance patch cables.

PERFORMANCE CHARACTERISTICS
OF PATCH CABLES

Conductor material, cable construction, shielding and insulation or cable sheathing materials are decisive factors for the signal quality and thus the performance of patch cables in their respective areas of application. For easier identification these classification features have been divided into classes or categories with minimum requirements regarding a cable's transmission bandwidth, shielding types, circuitry and signal attenuation.

SYSTEM AWG
AMERICAN WIRE GAUGE

This is an American coding for wire thicknesses, developed from the number of necessary drawing steps with the production of wires. The higher the AWG value, the thinner the wire. For the copper conductors of AWG cables, values between AWG26 and AWG28 are common.

CROSSOVER CABLE
OCCUPANCY CROSSOVER

In contrast to the 1:1 wired standard patch cable, crossover cables have a crossed pinout. With these cables, the connection between transmitter and receiver pins is realised by a different wiring of both connectors on a patch cable. This allows two terminals to be connected directly without the need for an intermediate hub or switch. For example, two PCs or a PC and network camera.

HALOGEN-FREE -LSZH
LOW SMOKE ZERO HALOGEN

This is a type of cable sheathing and insulation material that emits low levels of smoke during fires and does not contain any halogens (fluorine, chlorine, iodine, bromine) as these release highly toxic gases (e.g. chlorine gas) during combustion. The use of cables from this class is vital, especially in public spaces.

POE
POWER OVER ETHERNET

Network terminals generally require not only a data connection but also a power supply, usually in the form of a plug-in power supply unit. This can quickly become a problem with remotely placed devices such as WLAN access points or network cameras due to a lack of nearby sockets. The PoE standard not only transmits data but also provides power via the network cable if the switch and terminal device both support PoE.

SOLID CORE
TWISTED WIRE

As standard, the conductors of patch cables consist of one strand (thin wire), which is twisted together from several very fine wires, which results in higher flexibility, but unfortunately also a worse electrical conductance compared to solid wires. Certain applications that are specifically dependent on good conductivity (e.g. some extender solutions that use Cat.X cables) therefore require solid-core cables with solid copper cores.

WIRING 1:1
IDENTICALLY ASSIGNED CONNECTORS

In standard network operation, the transmitter pin pairs of one device are connected to the receiver pin pairs of the other device in a cable connection using RJ45 connectors. Network devices (hubs, switches, repeaters, routers etc.) and terminal devices (PCs, servers, printers, cameras etc.) are wired differently at their connections by specification, so that connections are possible with standard patch cables which have 1:1 wiring. This means that both connectors have the same pins connected to each other.

COPPER-CLAD CCA
COPPER CLAD ALUMINIUM

This is a copper clad aluminium conductor material. It makes use of what is known as the "skin effect", which ensures that at the high transmission frequencies on network cables the signal current flow essentially loads the outer layer of the cable core electrically, while virtually no current flows inside. This means that the cable cores inside can be made of the less conductive but also less expensive, aluminium while the outer layer is made of the more conductive copper. This type of cable is not recommended for PoE application since the PoE power supply (see above) operates with DC voltage (where the "skin effect" does not occur) and therefore increased heat in the cable must be expected because of the poorer electrical conductivity of aluminium.

TPE
THERMOPLASTIC ELASTOMERS

These are plastics frequently used as insulation and sheathing materials (usually halogen-free), which exhibit elastic properties at their operating temperature but plastic properties in the event of high heat input, making them ideally suited for the above application.

KNOW YOUR CAT.S
CABLE CATEGORIES

The classification of patch cables into categories 1 to 7 follows the general definition of classes A to G for connections and transmission channels in the ISO/IEC 11801 specification. The category therefore always designates a single component of a transmission channel. In the case described here the cables, but it can also be, for example, the junction boxes or plugs and sockets, while the class designates the entire channel. Above class F, class G is still defined with subclasses I and II, and, analogously, cabling categories 8, 8.1 and 8.2 are defined. For modern cabling these are relevant from class D or Cat.5e

CAT. 5

Standard for Prosumer

Cables of this category are used for class D transmission channels and are most commonly found in existing installations. They can transmit frequencies up to 100MHz and are divided into Cat.5 and Cat.5e. While Cat.5 supported fast Ethernet with 100Mbps, it was not suitable for Gigabit Ethernet and therefore holds no substantial place within the market. Cat.5e however, was a cable standard with improved NeXT and FeXT values that is used for 1000BaseT networks. This low-cost standard is popular in the home and prosumer markets and is still widely used.

CAT. 6

Professional Applications

Category 6 cables belong to connection class E or E_A and are therefore also divided into Cat.6 and Cat.6_A (Cat.6 Augmented) for the transmission of frequencies up to 250 or 500MHz. Cat.6 cables are mainly used in data networks with multimedia applications and high network load. In order to meet the higher bandwidth requirements for 10 Gigabit Ethernet, Cat.6 cables are used. Cat.6_A has been chosen as the category for frequencies up to 500MHz over a maximum of 100m. This means that in modern installations designed for 10GBASE-T you should always find at least Cat.6_A cable.

CAT. 7

Improved Shielding – Higher Data Rates

Category 7 is divided into Cat.7 and Cat.7_A for cables and according to class F and class F_A. Defined for operating frequencies up to 600 or 1000 MHz, this category relies on a cable structure with 4 individually shielded pairs and one overall shield. This improved shielding means that the cables in this category are well equipped for future developments. For the first time, new Cat.7 connectors have been added to the standard, the RJ45 downward compatible Nexans GG45 and the fully shielded TERA connector from Siemon. However, both were not able to establish themselves on the market, Cat.7 cables and modern 10GBASE-T network devices continue to use RJ45.

CAT. 8

Professional High-End-Standard

Category 8, which has not yet been fully adopted, is currently in the starting blocks, with class G, which is divided into the subcategories Cat.8.1 with class I. Cat.8 features RJ45 connectors fully compatible with Cat.6_A and Class E_A, and Cat.8.2 and Class II, compatible and interoperable with Cat.7_A and class F_A with RJ45, GG45 or TERA connectors. Cat.8 is designed for a maximum operating frequency of 2000MHz. The cables in this category are suitable for use with the latest Ethernet standards, 25GBASE-T, 40GBASE-T and 100 GBASE-T. Cat.8 cables are typically found in data centres as short connections between switches and routers due to their shorter ranges.
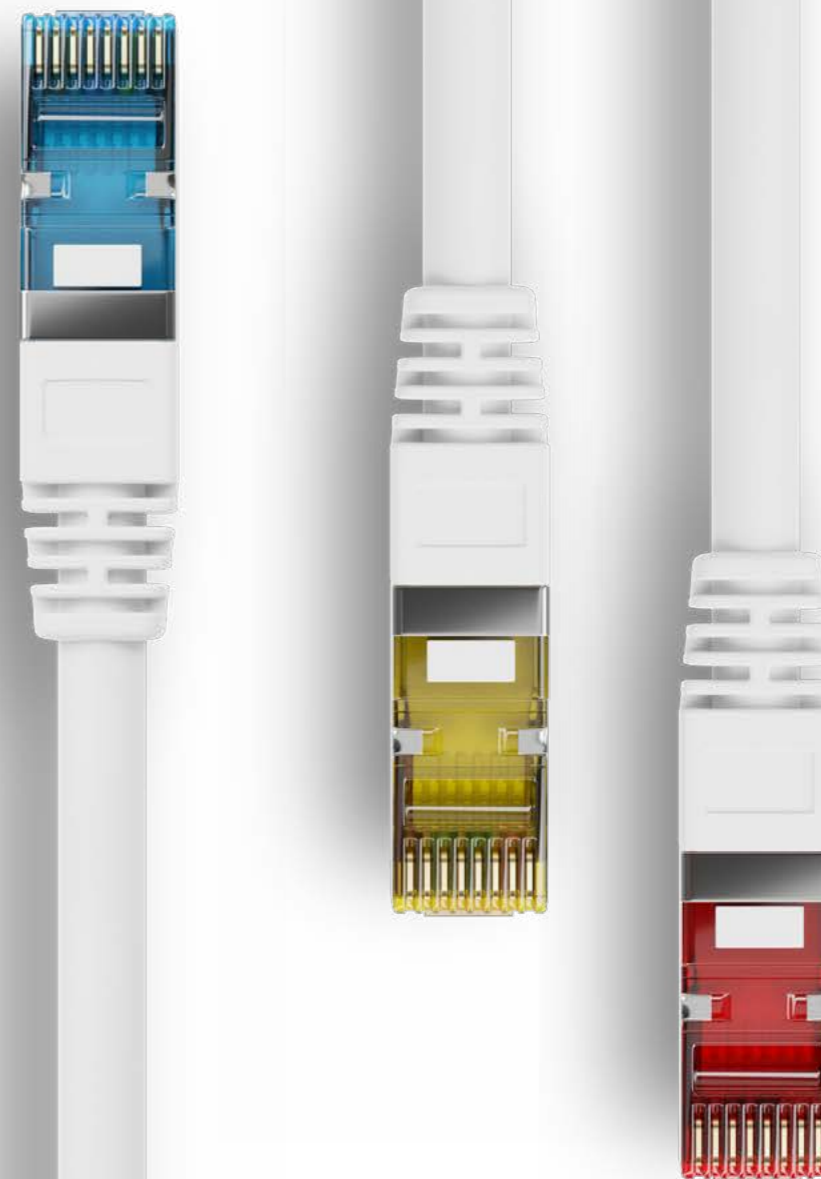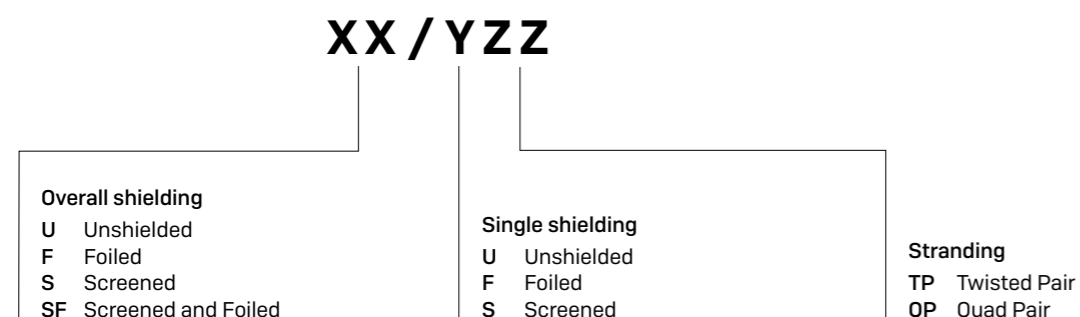
CABLE CONSTRUCTION
NETWORK CABLES & THEIR SHIELDING TYPES

Twisted pair cables generally consist of four pairs of wires twisted together. The twisting serves to minimize the parasitic capacitance, which otherwise impairs the transmission quality of a cable, especially in high frequency bands with high signal attenuation values when the wire pair are parallel to each other. The four wire pairs are also stranded together in the cable to minimize near and far crosstalk between the pairs (NeXT and FeXT). This cable bundle is called the cable core and is covered by the cable sheath. Depending on the type of shielding, the individual wire pairs or the cable core (or both, or none) are surrounded by a metal foil or a braided shield.

Nomenclature of shielding

Before the clear standardisation by ISO/IEC11801, the designations for shielding types were not uniform and caused some confusion in the market. This standard introduced the following designation scheme. For example: S/UTP for a TP cable with braid as total shield but without single shield, or SF/FTP for TP cable with braid and foil as total shield and foil as single pair shield.

XX / Y ZZ

Overall shielding
U   Unshielded
F   Foiled
S   Screened
SF Screened and Foiled

Single shielding
U   Unshielded
F   Foiled
S   Screened

Stranding
TP Twisted Pair
QP Quad Pair

Screening

A conductive ground connection that surrounds the cable core (overall shielding) or individual wire pairs (single shielding) normally significantly improves the signal quality in terms of interference immunity and radiation, interaction with other lines, as well as the eavesdropping security of a transmission path. At the connectors, this shield is then connected to the metallic connector housing, which establishes the ground connection via the device socket. Without shielding, this connection does not exist due to the galvanic isolation caused by the isolating transformers used in network technology. The general rules of shielding are the more, the denser, the more effective. The shielding of individually wired pairs also has clear and measurable positive effects here. Which is why some of the higher cable categories (e.g. Cat.7) with their high data rates also require cables with individual and overall shielding. Nevertheless, in the lower categories Cat.5e and Cat.6 completely unshielded cables are traditionally used.
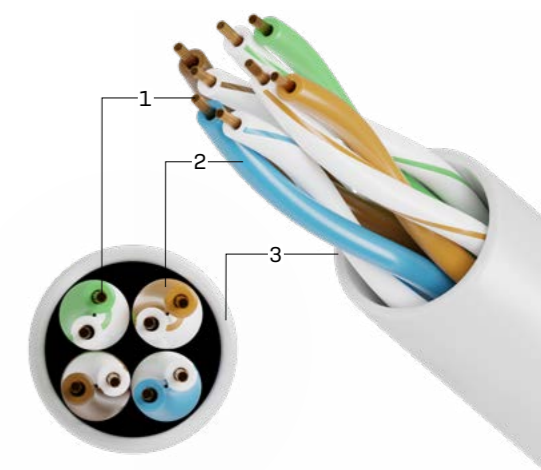
U/UTP

Unshielded Twisted Pair

Unshielded/Unshielded Twisted Pair – a completely unshielded cable, which is still often used for the lower cable categories Cat.5 and Cat.6 This means that they are usually sufficient for the transmission methods of networks up to Gigabit Ethernet, even if they are not optimal. However, in some cases it may be better to use unshielded cables.

Firstly, if there are large voltage potential differences between the end points of the reference potential and the network devices used are themselves connected to earth or ground potential via the PE contact of the power supply cable, a second earth connection and an earth loop is created. It generates low-frequency compensation currents via the cable shield, which considerably impair the signal quality. Second, some AV or USB extender systems that use Cat.X cables are more dependent on good crosstalk than good shielding and therefore work better with unshielded cables.

Since this type of cable can work without shielding and meet the requirements for its category, its NeXT and FeXT are usually much better. To achieve this, its wire pairs are often spatially separated by special plastic spacers within the cable sheath.

Cable Construction
1   Copper Wire
2   Polyolefin-Insulation
3   Cable sheath

F/UTP

Foiled Unshielded Twisted Pair

An F/UTP cable is made up of a U/UTP cable core wrapped in a foil screen made of mostly aluminium laminated plastic foil. For a long time this shielding type was the most frequently used and is more than enough for Cat.5 and Cat.6 cable categories and for transmission standards up to Gigabit Ethernet, while significantly optimising the signal quality compared to U/UTP cables.

Cable Construction
1   Copper Wire
2   Polyolefin-Insulation
3   Aluminium Foil
4   Cable sheath
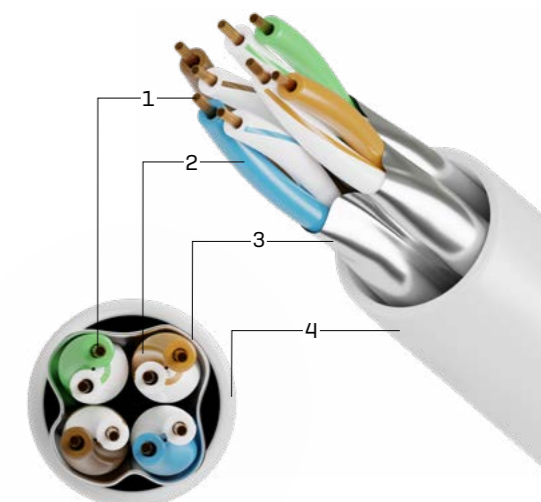
# S/FTP

Screened Foiled Twisted Pair

This shielding type with braided shielding around the cable core and foil shielding around the individual wire pairs is sometimes referred to as PiMF cable (Pair in Metal Foil). It represents the strongest shielding and must be used for some cable categories (Cat.7, Cat.7$_A$ and Cat.8.2). The wire mesh of the overall shield should have a coverage of more than 30% in order to achieve enough shielding against the typically low-frequency (and long-wave) interference.

Cable Construction
1 Copper Wire
2 Polyolefin-Insulation
3 Aluminium Foil
4 Aluminium Braiding
5 Cable sheath
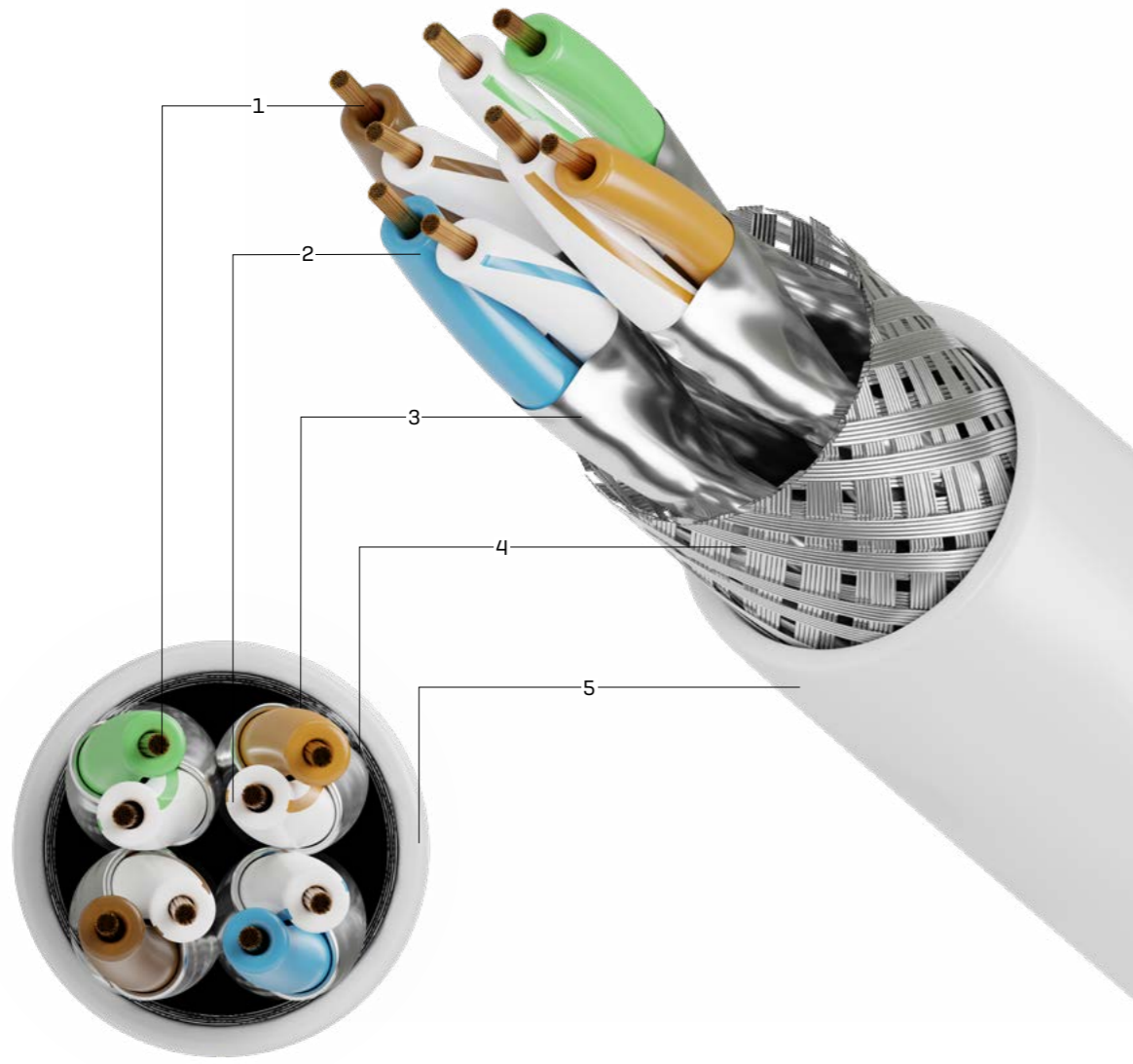
SHIELDED VS UNSHIELDED
SHIELDED VS UNSHIELDED

The international standard ISO/IEC11801, the American standard EIA/TIA568 and the European EN 50173 define (partly interlocking or overlapping) the categories 1 to 8 for individual components of transmission links (i.e. connectors and cables) within classes A to G for transmission links. The cable below Cat.5 for Class D can no longer be used for the requirements of network connections and therefore no longer hold any significant market share.

CATEGORY	VERSION	CLASS	MAX. OPERATING FREQUENCY	SHIELDING TYPE	PLUG CONNECTOR	USED FOR	NOTE	NORMAL
Cat.5	Cat.5e	D	100MHz	F/UTP, U/UTP	RJ45	1000Base-T 2,5GBase-T (Lengths <75m) 5GBase-T (Lengths <75m)	Still widely used in LANs. Sufficient for standard network applications.	ISO/IEC 11801 EN 50173
Cat.6	Cat.6	E	250MHz	S/FTP, F/UTP, U/UTP	RJ45	5GBase-T 10GBase-T (Lengths <55m)	Currently the most widespread.	EN 50288 EN 50173-1
	Cat.6$_A$	E$_A$	500MHz	S/FTP	RJ45	10GBase-T	'Official' mini-mum for 10GbE.	ISO/IEC 11801:2002 Appendix 2
Cat.7	Cat.7	F	600MHz	S/FTP	GG45, TERA	CCTV	Used in LAN or WAN as infra-structure cable.	ISO/IEC 11801, 2. Output
	Cat.7$_A$	F$_A$	1000MHz	S/FTP	GG45, TERA	CCTV	Hardly wide-spread in net-works.	ISO/IEC 11801, 2. Output, Appendix 2
Cat.8	Cat.8.1	G (I)	2000MHz	S/FTP	RJ45	25GBase-T (Lengths of 50m) 40GBase-T (Lengths of 30m)	Faster server interconnection. Connections in data centres.	ISO/IEC TR 11801-99-1
	Cat.8.2	G (II)	2000MHz	S/FTP	GG45, TERA	25GBase-T (Lengths of 50m) 40GBase-T (Lengths of 30m)	Still hardly used.	ISO/IEC TR 11801-99-1

CAT.5e

Cat.5e, an enhanced version Cat.5 cabling with improved electrophysical properties required for Gigabit Ethernet transmission. Since 2002/03 Cat.5 and Cat.5e are essentially the same and are now only differentiated from older, non-gigabit capable cables.

100MHZ OPERATING FREQUENCY

FAST ETHERNET AND GIGABIT ETHERNET CAPABLE

AVAILABLE ASF/UTP OR U/UTP

CAT.5 - STANDARD FOR PROSUMER

Still found in many network installations, Cat.5 cables have been providing reliable service for decades. For prosumer use in networked homes and in SoHO office installations, these cost effective and reliable cables are ideal.

CAT.5e F/UTP
AVAILABLE IN GREY & BLACK
IN LENGTHS FROM 0.3M – 30M
INDIVIDUALLY OR IN A SET OF 50

CAT.5e U/UTP
AVAILABLE IN GREY
IN LENGTHS FROM 0.3M – 100M
INDIVIDUALLY OR IN A SET OF 50

F/UTP CABLE
Grey

0.3m	No. 48340	7.5m	No. 48346
0.5m	No. 48341	10m	No. 48347
1m	No. 48342	15m	No. 48348
2m	No. 48343	20m	No. 48349
3m	No. 48344	30m	No. 48350
5m	No. 48345		

F/UTP CABLE
Black

0.3m	–	7.5m	–
0.5m	No. 48380	10m	No. 48385
1m	No. 48381	15m	–
2m	No. 48382	20m	–
3m	No. 48383	30m	–
5m	No. 48384		

F/UTP CABLE 50 PCS.
Grey

0.3m	–	7.5m	–
0.5m	No. 48335	10m	–
1m	No. 48336	15m	–
2m	No. 48337	20m	–
3m	No. 48338	30m	–
5m	No. 48339		

U/UTP CABLE
Grey

0.3m	No. 48360	20m	No. 48369
0.5m	No. 48361	30m	No. 48370
1m	No. 48362	40m	No. 48371
2m	No. 48363	50m	No. 48372
3m	No. 48364	60m	No. 48373
5m	No. 48365	70m	No. 48374
7.5m	No. 48366	80m	No. 48375
10m	No. 48367	90m	No. 48376
15m	No. 48368	100m	No. 48377

U/UTP CABLE 50 PCS.
Grey

0.3m	–	20m	–
0.5m	–	30m	–
1m	–	40m	–
2m	No. 48357	50m	–
3m	–	60m	–
5m	–	70m	–
7.5m	–	80m	–
10m	–	90m	–
15m	–	100m	–

CAT.5e F/UTP CCA
AVAILABLE IN GREY
IN LENGTHS FROM 0.5M – 10M
INDIVIDUALLY OR IN A SET OF 50

CAT.5e U/UTP CCA
AVAILABLE IN GREY
IN LENGTHS FROM 0.5M – 10M
INDIVIDUALLY OR IN A SET OF 50

F/UTP CCA CABLE
Grey

0.5m	No. 48390	3m	No. 48393
1m	No. 48391	5m	No. 48394
2m	No. 48392	10m	No. 48395

F/UTP CCA CABLE 50 PCS.
Grey

0.5m	–	3m	No. 48398
1m	No. 48396	5m	No. 48399
2m	No. 48397	10m	–

U/UTP CCA CABLE
Grey

0.5m	No. 48400	3m	No. 48403
1m	No. 48401	5m	No. 48404
2m	No. 48402	10m	No. 48405

U/UTP CCA CABLE 50 PCS.
Grey

0.5m	–	3m	No. 48408
1m	No. 48406	5m	No. 48409
2m	No. 48407	10m	–

CAT.6ᴀ

To ensure a high-performance transmission medium was available alongside the introduction of 10 Gigabit Ethernet the international standardisation committee ISO/IEC defined the Cat.6ᴀ category with the ISO/IEC11801. With an 500MHz operating frequency these cables can meet the requirements of 10GBaseT.

250MHZ (CAT.6) OR 500MHZ (CAT.6ᴀ) OPERATING FREQUENCY
GIGABIT-ETHERNET (CAT.6) OR 10GBASE-T (CAT.6ᴀ) CAPABLE
AVAILABLE AS S/FTP, F/UTP OR U/UTP
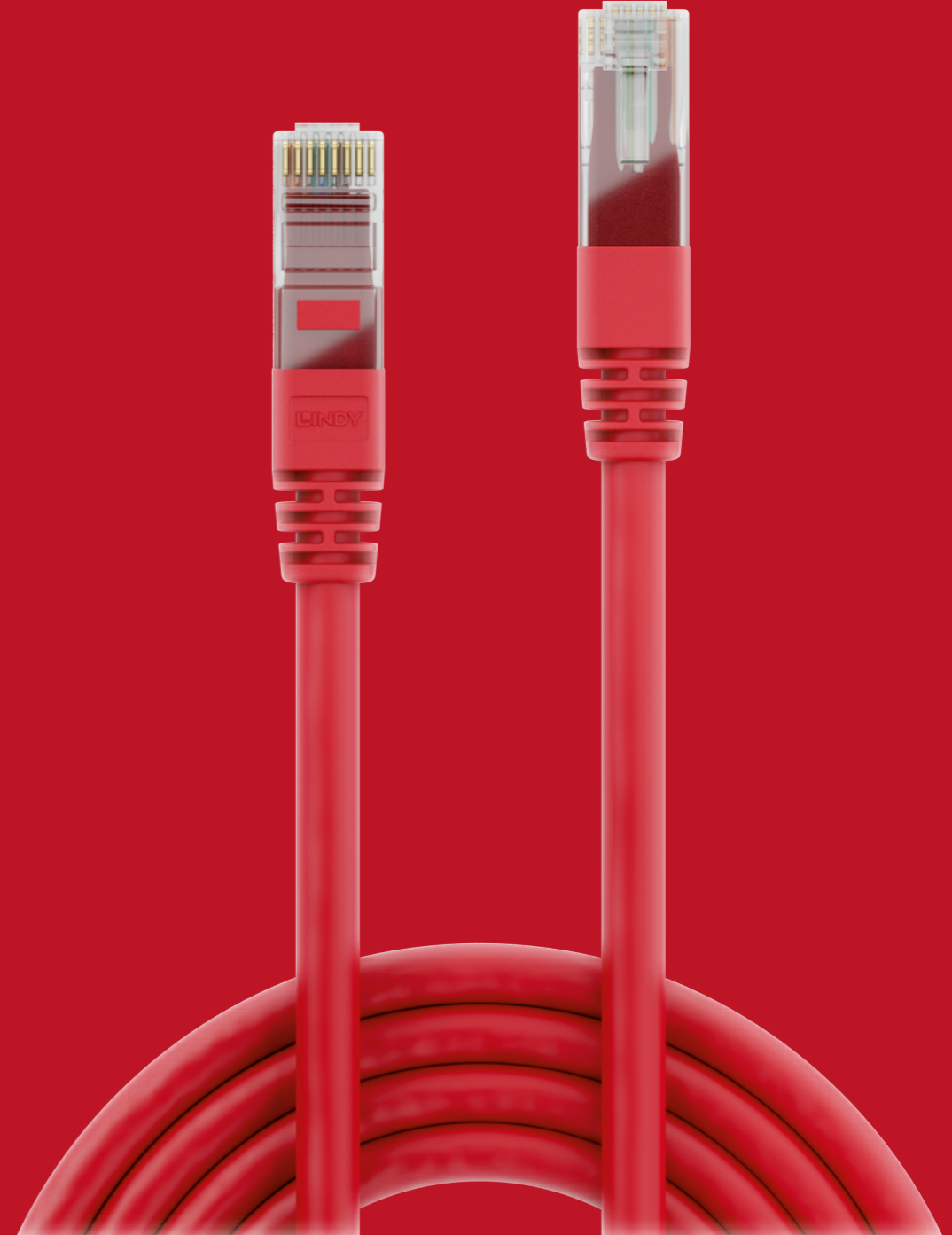
CAT.6 - PROFESSIONAL APPLICATIONS

The all-rounder in network cables for the high demands of professional environments. These cables are suitable for medium to large network installations with high network load, including applications such as streaming and digital signage. They are the standard for network infrastructure used by almost all public institutions.

CAT.6A S/FTP LSZH, 26 AWG
AVAILABLE IN GREY, BLACK, BLUE, RED
IN LENGTHS FROM 0.3M – 30M

S/FTP LSZH CABLE
Grey

0.3m	No. 45350	**7.5m**	No. 45356
0.5m	No. 45351	**10m**	No. 45357
1m	No. 45352	**15m**	No. 45358
2m	No. 45353	**20m**	No. 45359
3m	No. 45354	**30m**	No. 45360
5m	No. 45355		
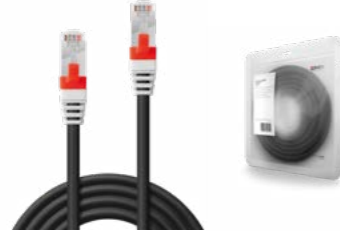
S/FTP LSZH CABLE
Black

0.3m	No. 45361	**7.5m**	No. 45367
0.5m	No. 45362	**10m**	No. 45368
1m	No. 45363	**15m**	No. 45369
2m	No. 45364	**20m**	No. 45370
3m	No. 45365	**30m**	No. 45371
5m	No. 45366		

S/FTP LSZH CABLE
Blue

0.3m	No. 45372	**7.5m**	No. 45378
0.5m	No. 45373	**10m**	No. 45379
1m	No. 45374	**15m**	No. 45380
2m	No. 45375	**20m**	No. 45381
3m	No. 45376	**30m**	No. 45382
5m	No. 45377		

S/FTP LSZH CABLE
Red

0.3m	No. 45383	**7.5m**	No. 45389
0.5m	No. 45384	**10m**	No. 45390
1m	No. 45385	**15m**	No. 45391
2m	No. 45386	**20m**	No. 45392
3m	No. 45387	**30m**	No. 45393
5m	No. 45388		

CAT.6A S/FTP LSZH, 27 AWG
AVAILABLE IN GREY & BLACK, WHITE, BLUE, RED
IN LENGTHS FROM 0.3M – 30M

S/FTP LSZH CABLE
Grey

0.3m	No. 47130	**5m**	No. 47136
0.5m	No. 47131	**7.5m**	No. 47137
1m	No. 47132	**10m**	No. 47138
1.5m	No. 47133	**15m**	No. 47139
2m	No. 47134	**20m**	No. 47140
3m	No. 47135	**30m**	No. 47141

S/FTP LSZH CABLE
Black

0.3m	No. 47175	**5m**	No. 47181
0.5m	No. 47176	**7.5m**	No. 47182
1m	No. 47177	**10m**	No. 47183
1.5m	No. 47178	**15m**	No. 47184
2m	No. 47179	**20m**	No. 47185
3m	No. 47180	**30m**	No. 47186

S/FTP LSZH CABLE
White

0.3m	No. 47190	**5m**	No. 47196
0.5m	No. 47191	**7.5m**	No. 47197
1m	No. 47192	**10m**	No. 47198
1.5m	No. 47193	**15m**	No. 47199
2m	No. 47194	**20m**	No. 47200
3m	No. 47195	**30m**	No. 47201

S/FTP LSZH CABLE
Blue

0.3m	No. 47145	**5m**	No. 47151
0.5m	No. 47146	**7.5m**	No. 47152
1m	No. 47147	**10m**	No. 47153
1.5m	No. 47148	**15m**	No. 47154
2m	No. 47149	**20m**	No. 47155
3m	No. 47150	**30m**	No. 47156
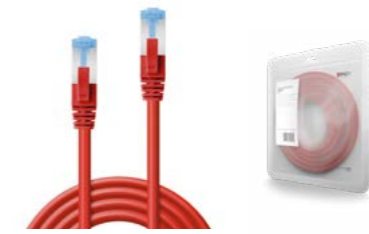
S/FTP LSZH CABLE
Red

0.3m	No. 47160	**5m**	No. 47166
0.5m	No. 47161	**7.5m**	No. 47167
1m	No. 47162	**10m**	No. 47168
1.5m	No. 47163	**15m**	No. 47169
2m	No. 47164	**20m**	No. 47170
3m	No. 47165	**30m**	No. 47171

CAT.6$_A$ S/FTP TPE
AVAILABLE IN BLACK
IN LENGTHS FROM 0.3M – 30M

CAT.6$_A$ FLAT RIBBON SHIELDED CABLE
AVAILABLE IN BLACK & WHITE
IN LENGTHS FROM 0.3M – 10M

S/FTP TPE CABLE
Black

0.3m	No. 47410	5m	No. 47416
0.5m	No. 47411	7.5m	No. 47417
1m	No. 47412	10m	No. 47418
1.5m	No. 47413	15m	No. 47419
2m	No. 47414	20m	No. 47420
3m	No. 47415	30m	No. 47421

FLAT RIBBON SHIELDED CABLE
Black

0.3m	No. 47480	3m	No. 47483
1m	No. 47481	5m	No. 47484
2m	No. 47482	10m	No. 47485

FLAT RIBBON SHIELDED CABLE
White

0.3m	No. 47540	3m	No. 47543
1m	No. 47541	5m	No. 47544
2m	No. 47542	10m	No. 47545

CAT.6 S/FTP LSZH
AVAILABLE IN GREY, BLACK, BLUE, RED
IN LENGTHS FROM 0.3M – 100M

CAT.6 S/FTP CROMO
AVAILABLE IN ANTHRACITE
IN LENGTHS FROM 0.3M – 30M

CAT.6 S/FTP TPE
AVAILABLE IN BLACK
IN LENGTHS FROM 0.3M – 30M

S/FTP LSZH CABLE
Grey

0.3m	No. 45580	20m	No. 45589
0.5m	No. 45581	30m	No. 45590
1m	No. 45582	40m	No. 45591
2m	No. 45583	50m	No. 45592
3m	No. 45584	60m	No. 45593
5m	No. 45585	70m	No. 45594
7.5m	No. 45586	80m	No. 45595
10m	No. 45587	90m	No. 45596
15m	No. 45588	100m	No. 45597

S/FTP LSZH CABLE
Black

0.3m	No. 45600	20m	No. 45609
0.5m	No. 45601	30m	No. 45610
1m	No. 45602	40m	–
2m	No. 45603	50m	–
3m	No. 45604	60m	–
5m	No. 45605	70m	–
7.5m	No. 45606	80m	–
10m	No. 45607	90m	–
15m	No. 45608	100m	–

S/FTP LSZH CABLE
Blue

0.3m	No. 45640	20m	No. 45649
0.5m	No. 45641	30m	No. 45650
1m	No. 45642	40m	–
2m	No. 45643	50m	–
3m	No. 45644	60m	–
5m	No. 45645	70m	–
7.5m	No. 45646	80m	–
10m	No. 45647	90m	–
15m	No. 45648	100m	–

S/FTP LSZH CABLE
Red

0.3m	No. 45620	20m	No. 45629
0.5m	No. 45621	30m	No. 45630
1m	No. 45622	40m	–
2m	No. 45623	50m	–
3m	No. 45624	60m	–
5m	No. 45625	70m	–
7.5m	No. 45626	80m	–
10m	No. 45627	90m	–
15m	No. 45628	100m	–

S/FTP CROMO CABLE
Anthracite

0.3m	No. 47210	7.5m	No. 47216
0.5m	No. 47211	10m	No. 47217
1m	No. 47212	15m	No. 47218
2m	No. 47213	20m	No. 47219
3m	No. 47214	30m	No. 47220
5m	No. 47215		

S/FTP TPE CABLE
Black

0.3m	No. 47390	5m	No. 47396
0.5m	No. 47391	7.5m	No. 47397
1m	No. 47392	10m	No. 47398
1.5m	No. 47393	15m	No. 47399
2m	No. 47394	20m	No. 47400
3m	No. 47395	30m	No. 47401

CAT.6 S/FTP AWG27
AVAILABLE IN GREY, BLACK, WHITE,
BLUE, RED, GREEN, YELLOW, ORANGE, PURPLE
IN LENGTHS FROM 0.3M – 30M
INDIVIDUALLY OR IN A SET OF 50

S/FTP AWG27 CABLE
Grey

0.3m	No. 47700	5m	No. 47706
0.5m	No. 47701	7.5m	No. 47707
1m	No. 47702	10m	No. 47708
1.5m	No. 47703	15m	No. 47709
2m	No. 47704	20m	No. 47710
3m	No. 47705	30m	No. 47711

S/FTP AWG27 CABLE
Black

0.3m	No. 47775	5m	No. 47781
0.5m	No. 47776	7.5m	No. 47782
1m	No. 47777	10m	No. 47783
1.5m	No. 47778	15m	No. 47784
2m	No. 47779	20m	No. 47785
3m	No. 47780	30m	No. 47786

S/FTP AWG27 CABLE
White

0.3m	No. 47790	5m	No. 47796
0.5m	No. 47791	7.5m	No. 47797
1m	No. 47792	10m	No. 47798
1.5m	No. 47793	15m	No. 47799
2m	No. 47794	20m	No. 47800
3m	No. 47795	30m	No. 47801
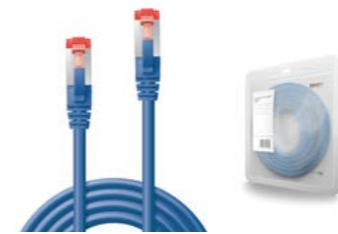
S/FTP AWG27 CABLE
Blue

0.3m	No. 47715	5m	No. 47721
0.5m	No. 47716	7.5m	No. 47722
1m	No. 47717	10m	No. 47723
1.5m	No. 47718	15m	No. 47724
2m	No. 47719	20m	No. 47725
3m	No. 47720	30m	No. 47726

S/FTP AWG27 CABLE
Red

0.3m	No. 47730	5m	No. 47736
0.5m	No. 47731	7.5m	No. 47737
1m	No. 47732	10m	No. 47738
1.5m	No. 47733	15m	No. 47739
2m	No. 47734	20m	No. 47740
3m	No. 47735	30m	No. 47741
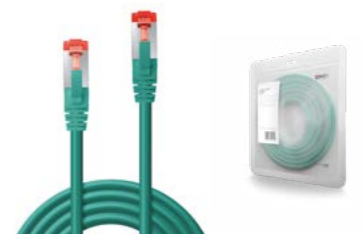
S/FTP AWG27 CABLE
Green

0.3m	No. 47745	5m	No. 47751
0.5m	No. 47746	7.5m	No. 47752
1m	No. 47747	10m	No. 47753
1.5m	No. 47748	15m	No. 47754
2m	No. 47749	20m	No. 47755
3m	No. 47750	30m	No. 47756

S/FTP AWG27 CABLE
Yellow

0.3m	No. 47760	5m	No. 47766
0.5m	No. 47761	7.5m	No. 47767
1m	No. 47762	10m	No. 47768
1.5m	No. 47763	15m	No. 47769
2m	No. 47764	20m	No. 47770
3m	No. 47765	30m	No. 47771

S/FTP AWG27 CABLE
Orange

0.3m	No. 47805	5m	No. 47811
0.5m	No. 47806	7.5m	No. 47812
1m	No. 47807	10m	No. 47813
1.5m	No. 47808	15m	No. 47814
2m	No. 47809	20m	No. 47815
3m	No. 47810	30m	No. 47816

S/FTP AWG27 CABLE
Purple

0.3m	No. 47820	5m	No. 47826
0.5m	No. 47821	7.5m	No. 47827
1m	No. 47822	10m	No. 47828
1.5m	No. 47823	15m	No. 47829
2m	No. 47824	20m	No. 47830
3m	No. 47825	30m	No. 47831

S/FTP AWG27 CABLE 50 PCS.
Grey

0.3m	–	5m	No. 47854
0.5m	No. 47850	7.5m	–
1m	No. 47851	10m	–
1.5m	–	15m	–
2m	No. 47852	20m	–
3m	No. 47853	30m	–

CAT.6 S/FTP CROSSOVER
AVAILABLE IN GREEN
IN LENGTHS FROM 0.3M – 30M

S/FTP CROSSOVER CABLE
Grey

0.3m	No. 47835	7.5m	No. 47841
0.5m	No. 47836	10m	No. 47842
1m	No. 47837	15m	No. 47843
2m	No. 47838	20m	No. 47844
3m	No. 47839	30m	No. 47845
5m	No. 47840		

CAT.6 S/FTP AWG28
AVAILABLE IN GREEN, BLACK, WHITE, BLUE, RED
IN LENGTHS FROM 0.3M – 10M

S/FTP AWG28 CABLE
Grey

0.3m	No. 47340	3m	No. 47345
0.5m	No. 47341	5m	No. 47346
1m	No. 47342	7.5m	No. 47347
1.5m	No. 47343	10m	No. 47348
2m	No. 47344		

S/FTP AWG28 CABLE
Black

0.3m	No. 47370	3m	No. 47375
0.5m	No. 47371	5m	No. 47376
1m	No. 47372	7.5m	No. 47377
1.5m	No. 47373	10m	No. 47378
2m	No. 47374		

S/FTP AWG28 CABLE
White

0.3m	No. 47380	3m	No. 47385
0.5m	No. 47381	5m	No. 47386
1m	No. 47382	7.5m	No. 47387
1.5m	No. 47383	10m	No. 47388
2m	No. 47384		

S/FTP AWG28 CABLE
Blue

0.3m	No. 47350	3m	No. 47355
0.5m	No. 47351	5m	No. 47356
1m	No. 47352	7.5m	No. 47357
1.5m	No. 47353	10m	No. 47358
2m	No. 47354		

S/FTP AWG28 CABLE
Red

0.3m	No. 47360	3m	No. 47365
0.5m	No. 47361	5m	No. 47366
1m	No. 47362	7.5m	No. 47367
1.5m	No. 47363	10m	No. 47368
2m	No. 47364		

CAT.6 F/UTP CCA
AVAILABLE IN GREY
IN LENGTHS FROM 0.3M – 10M

CAT.6 F/UTP SOLID
AVAILABLE IN GREY
IN LENGTHS FROM 10M – 100M

F/UTP CCA KABEL
Grey

0.3m	No. 47240	3m	No. 47245
0.5m	No. 47241	5m	No. 47246
1m	No. 47242	7.5m	No. 47247
1.5m	No. 47243	10m	No. 47248
2m	No. 47244		

F/UTP SOLID CABLE
Grey

10m	No. 44470	50m	No. 44474
20m	No. 44471	75m	No. 44475
30m	No. 44472	100m	No. 44476
40m	No. 44473		

CAT.6 FLAT RIBBON SHIELDED CABLE
AVAILABLE IN GREY, BLACK, WHITE
IN LENGTHS FROM 0.3M – 10M

FLAT RIBBON SHIELDED CABLE
Grey

0.3m	No. 47550	3m	No. 47553
1m	No. 47551	5m	No. 47554
2m	No. 47552	10m	No. 47555

FLAT RIBBON SHIELDED CABLE
Black

0.3m	No. 47570	3m	No. 47573
1m	No. 47571	5m	No. 47574
2m	No. 47572	10m	No. 47575

FLAT RIBBON SHIELDED CABLE
White

0.3m	No. 47560	3m	No. 47563
1m	No. 47561	5m	No. 47564
2m	No. 47562	10m	No. 47565

CAT.6 U/UTP LSZH
AVAILABLE IN GREY, BLACK, BLUE, RED
IN LENGTHS FROM 0.3M – 30M

U/UTP LSZH CABLE
Grey

0.3m	No. 45400	7.5m	No. 45406
0.5m	No. 45401	10m	No. 45407
1m	No. 45402	15m	No. 45408
2m	No. 45403	20m	No. 45409
3m	No. 45404	30m	No. 45410
5m	No. 45405		

U/UTP LSZH CABLE
Black

0.3m	No. 45430	7.5m	–
0.5m	No. 45431	10m	–
1m	No. 45432	15m	–
2m	No. 45433	20m	–
3m	No. 45434	30m	–
5m	No. 45435		

U/UTP LSZH CABLE
Blue

0.3m	No. 45470	7.5m	–
0.5m	No. 45471	10m	–
1m	No. 45472	15m	–
2m	No. 45473	20m	–
3m	No. 45474	30m	–
5m	No. 45475		

U/UTP LSZH CABLE
Red

0.3m	No. 45450	7.5m	–
0.5m	No. 45451	10m	–
1m	No. 45452	15m	–
2m	No. 45453	20m	–
3m	No. 45454	30m	–
5m	No. 45455		

CAT.6 U/UTP
AVAILABLE IN GREY, BLACK, WHITE,
BLUE, RED, GREEN, YELLOW, ORANGE, PURPLE
IN LENGTHS FROM 0.3M – 30M
INDIVIDUALLY OR IN A SET OF 50

U/UTP CABLE
Grey

0.3m	No. 48000	7.5m	No. 48006
0.5m	No. 48001	10m	No. 48007
1m	No. 48002	15m	No. 48008
2m	No. 48003	20m	No. 48009
3m	No. 48004	30m	No. 48010
5m	No. 48005		

U/UTP CABLE
Black

0.3m	No. 48075	7.5m	No. 48081
0.5m	No. 48076	10m	No. 48082
1m	No. 48077	15m	No. 48083
2m	No. 48078	20m	No. 48084
3m	No. 48079	30m	No. 48085
5m	No. 48080		

U/UTP CABLE
White

0.3m	No. 48090	7.5m	No. 48096
0.5m	No. 48091	10m	No. 48097
1m	No. 48092	15m	No. 48098
2m	No. 48093	20m	No. 48099
3m	No. 48094	30m	No. 48100
5m	No. 48095		

U/UTP CABLE
Blue

0.3m	No. 48015	7.5m	No. 48021
0.5m	No. 48016	10m	No. 48022
1m	No. 48017	15m	No. 48023
2m	No. 48018	20m	No. 48024
3m	No. 48019	30m	No. 48025
5m	No. 48020		

U/UTP CABLE
Red

0.3m	No. 48030	7.5m	No. 48036
0.5m	No. 48031	10m	No. 48037
1m	No. 48032	15m	No. 48038
2m	No. 48033	20m	No. 48039
3m	No. 48034	30m	No. 48040
5m	No. 48035		

U/UTP CABLE
Green

0.3m	No. 48045	7.5m	No. 48051
0.5m	No. 48046	10m	No. 48052
1m	No. 48047	15m	No. 48053
2m	No. 48048	20m	No. 48054
3m	No. 48049	30m	No. 48055
5m	No. 48050		

CAT.6 U/UTP CROSSOVER
AVAILABLE IN GREY
IN LENGTHS FROM 0.3M – 30M

U/UTP CABLE
Yellow

0.3m	No. 48060	7.5m	No. 48066
0.5m	No. 48061	10m	No. 48067
1m	No. 48062	15m	No. 48068
2m	No. 48063	20m	No. 48069
3m	No. 48064	30m	No. 48070
5m	No. 48065		

U/UTP CABLE
Orange

0.3m	No. 48105	7.5m	No. 48111
0.5m	No. 48106	10m	No. 48112
1m	No. 48107	15m	No. 48113
2m	No. 48108	20m	No. 48114
3m	No. 48109	30m	No. 48115
5m	No. 48110		

U/UTP CABLE
Purple

0.3m	No. 48120	7.5m	No. 48126
0.5m	No. 48121	10m	No. 48127
1m	No. 48122	15m	No. 48128
2m	No. 48123	20m	No. 48129
3m	No. 48124	30m	No. 48130
5m	No. 48125		

U/UTP CABLE 50 PCS.
Grey

0.3m	–	7.5m	–
0.5m	No. 48150	10m	–
1m	No. 48151	15m	–
2m	No. 48152	20m	–
3m	No. 48153	30m	–
5m	No. 48154		

U/UTP CROSSOVER CABLE
Grey

0.3m	No. 48135	7.5m	No. 48141
0.5m	No. 48136	10m	No. 48142
1m	No. 48137	15m	No. 48143
2m	No. 48138	20m	No. 48144
3m	No. 48139	30m	No. 48145
5m	No. 48140		

CAT.6 U/UTP CCA
AVAILABLE IN GREY, BLACK,
WHITE, BLUE, RED
IN LENGTHS FROM 0.3M – 10M

U/UTP CCA CABLE
Grey

0.3m	No. 48160	3m	No. 48164
0.5m	No. 48161	5m	No. 48165
1m	No. 48162	7.5m	No. 48166
2m	No. 48163	10m	No. 48167

U/UTP CCA CABLE
Black

0.3m	No. 48190	3m	No. 48194
0.5m	No. 48191	5m	No. 48195
1m	No. 48192	7.5m	No. 48196
2m	No. 48193	10m	No. 48197

U/UTP CCA CABLE
White

0.3m	No. 48200	3m	No. 48204
0.5m	No. 48201	5m	No. 48205
1m	No. 48202	7.5m	No. 48206
2m	No. 48203	10m	No. 48207

U/UTP CCA CABLE
Blue

0.3m	No. 48170	3m	No. 48174
0.5m	No. 48171	5m	No. 48175
1m	No. 48172	7.5m	No. 48176
2m	No. 48173	10m	No. 48177
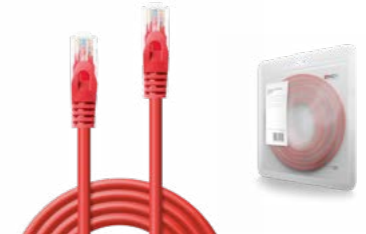
U/UTP CCA CABLE
Red

0.3m	No. 48180	3m	No. 48184
0.5m	No. 48181	5m	No. 48185
1m	No. 48182	7.5m	No. 48186
2m	No. 48183	10m	No. 48187

CAT.6 U/UTP SOLID
AVAILABLE IN GREY
IN LENGTHS FROM 10M – 100M

CAT.6 FLAT RIBBON UNSHIELDED CABLE
AVAILABLE IN GREY, BLACK, WHITE, RED
IN LENGTHS FROM 0.3M – 10M

U/UTP SOLID CABLE
Grey

10m	No. 44460	50m	No. 44464
20m	No. 44461	75m	No. 44465
30m	No. 44462	100m	No. 44466
40m	No. 44463		

FLAT RIBBON UNSHIELDED CABLE
Grey

0.3m	No. 47490	3m	No. 47493
1m	No. 47491	5m	No. 47494
2m	No. 47492	10m	No. 47495

FLAT RIBBON UNSHIELDED CABLE
Black

0.3m	No. 47520	3m	No. 47523
1m	No. 47521	5m	No. 47524
2m	No. 47522	10m	No. 47525

FLAT RIBBON UNSHIELDED CABLE
White

0.3m	No. 47500	3m	No. 47503
1m	No. 47501	5m	No. 47504
2m	No. 47502	10m	No. 47505

FLAT RIBBON UNSHIELDED CABLE
Red

0.3m	No. 47510	3m	No. 47513
1m	No. 47511	5m	No. 47514
2m	No. 47512	10m	No. 47515

CAT.7

CAT.7 - HIGHER DATA RATES

Cat.7 and its subcategory Cat.7ₐ have been defined in order to be prepared for future transmission standards with even higher bandwidth requirements. These cables are a reliable standard in large 10GBase-T networks with high-data loads and bandwidth-hungry multimedia applications.

600MHZ OPERATING FREQUENCY
10 GIGABIT-ETHERNET (10GBASE-T) CAPABLE
AVAILABLE AS S/FTP ONLY

CAT.7 CONNECTOR

Since the definition of Cat.7 was based on the assumption that the proven RJ45 connector would not meet the high bandwidth requirements of 10 Gigabit Ethernet, two new fully shielded connector types were added to the definition. After the adoption of the 10GBase-T standard, however it turned out that RJ45 was sufficient. The Cat.7 was not adapted as a result, so that Cat.7 cables may not strictly speaking be referred to as RJ45 connectors because they are not defined for this category but are used in the market.
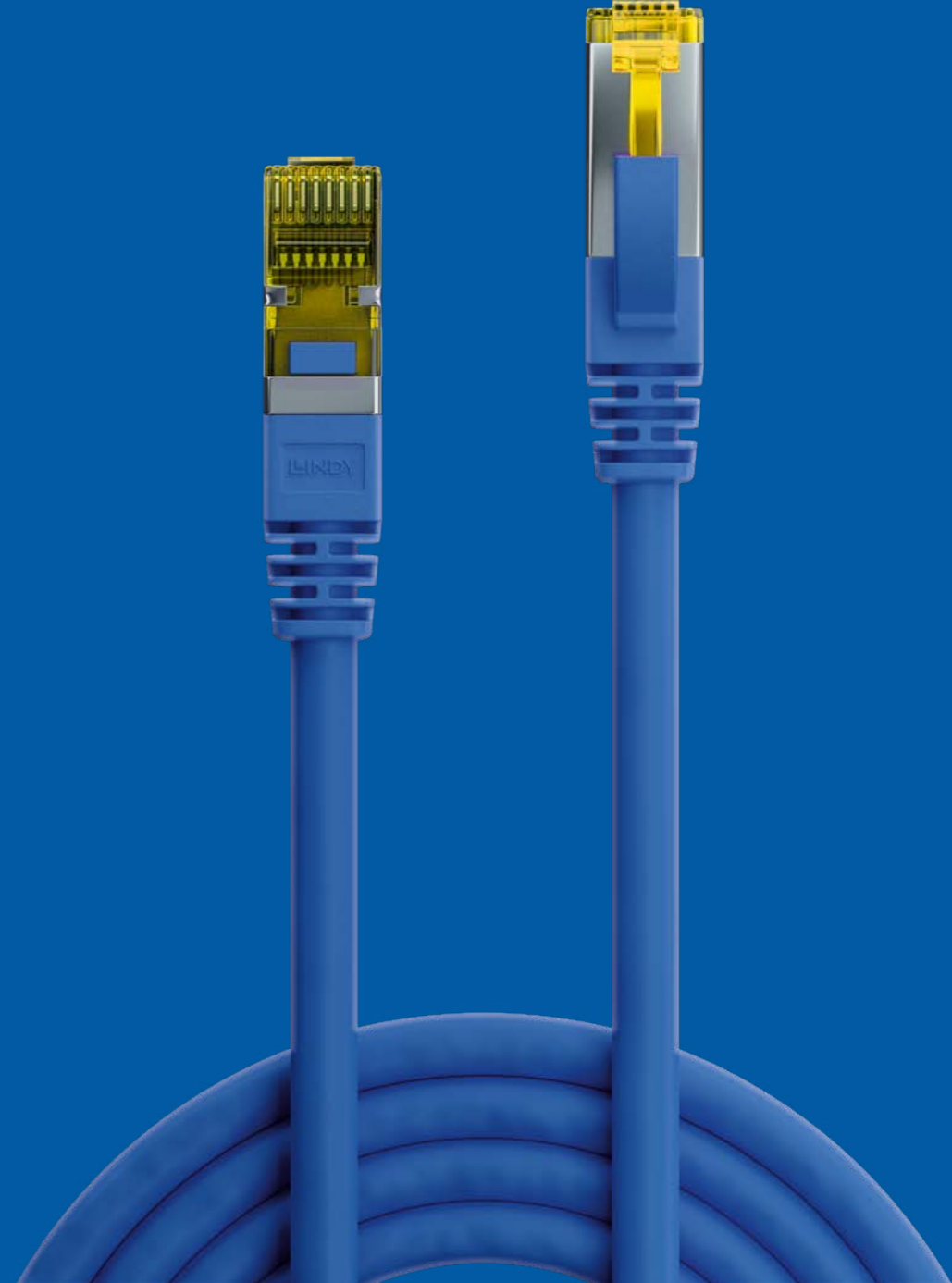
RJ45 600MHZ S/FTP LSZH
AVAILABLE IN GREY, BLACK,
WHITE, BLUE, RED
IN LENGTHS FROM 0.3M – 30M

S/FTP LSZH CABLE
Grey

0.3m	No. 47260	**5m**	No. 47266
0.5m	No. 47261	**7.5m**	No. 47267
1m	No. 47262	**10m**	No. 47268
1.5m	No. 47263	**15m**	No. 47269
2m	No. 47264	**20m**	No. 47270
3m	No. 47265	**30m**	No. 47271

S/FTP LSZH CABLE
Black

0.3m	No. 47305	**5m**	No. 47311
0.5m	No. 47306	**7.5m**	No. 47312
1m	No. 47307	**10m**	No. 47313
1.5m	No. 47308	**15m**	No. 47314
2m	No. 47309	**20m**	No. 47315
3m	No. 47310	**30m**	No. 47316

S/FTP LSZH CABLE
White

0.3m	No. 47320	**5m**	No. 47326
0.5m	No. 47321	**7.5m**	No. 47327
1m	No. 47322	**10m**	No. 47328
1.5m	No. 47323	**15m**	No. 47329
2m	No. 47324	**20m**	No. 47330
3m	No. 47325	**30m**	No. 47331

S/FTP LSZH CABLE
Blue

0.3m	No. 47275	**5m**	No. 47281
0.5m	No. 47276	**7.5m**	No. 47282
1m	No. 47277	**10m**	No. 47283
1.5m	No. 47278	**15m**	No. 47284
2m	No. 47279	**20m**	No. 47285
3m	No. 47280	**30m**	No. 47286
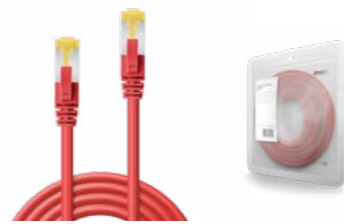
S/FTP LSZH CABLE
Red

0.3m	No. 47290	**5m**	No. 47296
0.5m	No. 47291	**7.5m**	No. 47297
1m	No. 47292	**10m**	No. 47298
1.5m	No. 47293	**15m**	No. 47299
2m	No. 47294	**20m**	No. 47300
3m	No. 47295	**30m**	No. 47301

CAT.8

CAT.8 – TOP OF THE LINE

The latest and future network transmission standards such as 25GBase-T, 40GBase-T or even 100GbE (100Gigabit Ethernet) requires a further increase in the maximum possible operating frequencies. This was taken into account with the definition of Cat.8 with the two variants Cat.8.1 and Cat.8.2. So far Category 8 cables have mainly been used in fast infrastructure data centres.

2000MHZ OPERATING FREQUENCY
25GBASE-T- UND 40GBASE-T CAPABLE
AVAILABLE AS S/FTP ONLY

CAT.8.1 & CAT.8.2

There are now two categories for establishing Class G connections, Cat.8.1, which relies on the continued use of the RJ45 connector (such as Cat.6/6$_A$ by definition and Cat.7/7$_A$) and Cat.8.2, which is based on the new connector faces already defined for Cat.7/7$_A$. Cat.8.1 cables are currently used as fast backbone connections, while Cat.8.2 cables are still not prevalent in the market.

CAT.8.1 S/FTP
AVAILABLE IN GREY
IN LENGTHS FROM 0.3M – 5M

S/FTP CABLE
Grey

0.3m	No. 47430	2m	No. 47434
0.5m	No. 47431	3m	No. 47435
1m	No. 47432	5m	No. 47436
1.5m	No. 47433		

CERTIFICATES
LINDY PATCH CABLE RANGES

RoHS (Restriction of Hazardous Substances)

The European RoHS Directive limits the use of certain substances harmful to the environment and health (currently 10 substances, e.g. lead, mercury or cadmium) in electrical and electronic equipment to a maximum of 0.1% by weight. Since 2011, external connecting cables with a nominal voltage < 250V, to which all patch cables belong, have also been subject to this regulation. RoHS is part of the required EU Declaration of Conformity, which is manifested by the CE marking of the cables (on the packaging).

ROHS COMPLIANT

REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)

The REACH regulation regulates the official registration of chemicals. It lays down information and obligations companies must follow if certain SVHC substances (Substances of very high concern) are contained in products in a concentration of more than 0.1 percent by weight. Since July 2019, the REACH SVHC list has included almost 200 substances and substance classes. In order to ensure that Lindy products are REACH-compliant, we have material and component suppliers submit test reports to us from test laboratories that prove REACH conformity.

REACH COMPLIANT

UL (Underwriters Laboratories)

UL is a U.S. independent certification organization for product safety. UL certification is not mandatory in Europe, but is still highly regarded in the markets and leads more easily to acceptance, especially for larger projects. Cables are specifically tested and certified with regard to their suitability for the specified purpose, flame retardance, temperature resistance, flue gas emission, etc. The majority of Lindy patch cables have UL certification, with the exception of CCA cables, TPE sheathed cables, flat sheathed cables and LSZH cables in categories 6_A (AWG 27), 7 and 8.1.

UL COMPLIANT CERTIFIED

ISO/IEC 11801

International standard for the customer's need for independent cabling in information technology. It describes suitable cabling for a large number of applications in the area of data transmission standards as well as digital and analogue telephony. The classes for optical fibre connections OM1 to OM5 and OS1 and OS2 are defined here, as are connection classes A to G and cable categories 1 to 8 for twisted pair connections. With the exception of CCA cables and flat patch cables, all Lindy patch cables comply with this standard.

ISO/ IEC 11801 COMPLIANT

LINDY
CONNECTION PERFECTION

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