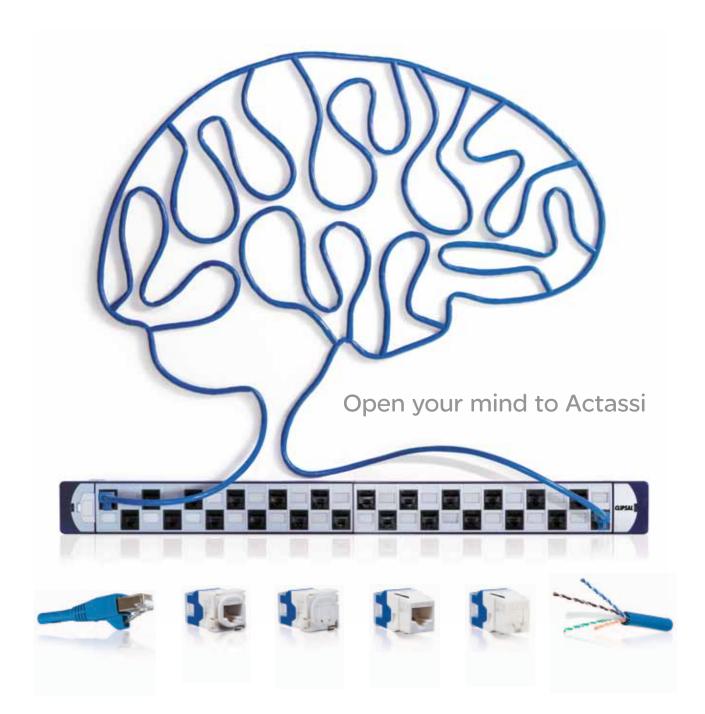


Category 6A UTP RJ45 solution

Your technical reference



clipsal.com

Clipsal Category 6A UTP RJ45 Solution

Clipsal Low Smoke Zero Halogen (LSZH) Patch Cord Clipsal Modular Jacks Clipsal Modular Shuttered Jacks Clipsal Keystone Jacks Clipsal Keystone Shuttered Jacks Clipsal Patch Panels Clipsal Cable Clipsal Cable Management Panel - Deep Clipsal Side Rings

INTRODUCTION

The Clipsal Category 6A UTP system is designed to support 10G Base T applications, and offers a great solution for an installation requiring high-speed and high bandwidth. This solution includes cable, patch panels, patch cables, modular jacks, as well as faceplates and cable management, and offers excellent headroom.

The Clipsal Category 6A UTP patched solution overcomes alien crosstalk (AXT) concerns through the use of shielded patch leads. This passive shielding helps prevent AXT at the patch panel.

This system is designed to meet AXT standards when installed in high-density active equipment applications. The product is independently verified, and certificates are available on request. The Clipsal Lifetime Warranty is available upon application.

Clipsal Australia R&D department have worked closely with Schneider Electric R&D department to provide the connector and patch panel we see today. Along with the performance parameters that were needed to be met we have taken all the feedback from the industry to provide a panel that is installer and end user friendly.

Clipsal Category 6A Patch Cord Low Smoke Zero Halogen (LSZH)

The Clipsal Category 6A patch cord is a superior product delivering the best network performance when used in conjunction with other Clipsal Category 6A products.

The patch cord is constructed of high grade cable and quality RJ45 plugs, and is designed to operate up to 500MHz. This enables it to operate successfully in a Category 6A environment.

The Clipsal Category 6A UTP patched solution uses a FTP patch cord to assist in mitigating alien cross talk (AXT) concerns.

The LSZH sheath is composed of thermoplastic and thermoset compounds that emit limited smoke and zero halogens (poisonous gases) when exposed to high sources of heat or fire and are PVC free.

The patch cords are a superior product delivering excellent network performance and a "greener" peace of mind. More LSZH and RoHS products are being used as networks move toward a "greener" workplace and environment.

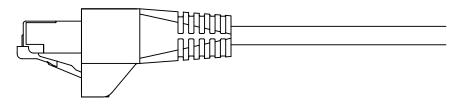
MECHANICAL CHARACTERISTICS

26 AWG
4-Pair individually colour coded with filler and LSZH jacket
Wiring sequence T568 A
750 mating cycles
FCC Part 68 Subpart F
LSZH
Phosphor bronze with 50 micro-inches gold over 100 micro-inches nickel

ELECTRICAL CHARACTERISTICS

Current Rating	2.0A maximum
Insulation	500MΩ minimum
Contact Resistance	20MΩ maximum

LINE DRAWING



CATALOGUE NUMBER	DESCRIPTION
RJ6AF8A10LPL	Patch Cord Category 6A LSZH 568A 1.0m
RJ6AF8A20LPL	Patch Cord Category 6A LSZH 568A 2.0m
RJ6AF8A30LPL	Patch Cord Category 6A LSZH 568A 3.0m
RJ6AF8A50LPL	Patch Cord Category 6A LSZH 568A 5.0m



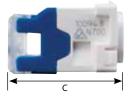
RJ6A8A10LPL

PRODUCT FEATURES

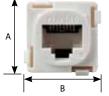
- Fully compliant to AS/NZS 3080, ISO/IEC 11801 and ANSI/TIA/EIA-568-C Series Channel and Link Standards.
- UL CMR fire rated jacketing.
- PE insulation on conductors.
- Designed to mitigate ANEXT.

- Performs to Category 6A International Standards.
- Comes in various lengths to assist with better cable management.
- Backward compatible with Category 5 and 6 products.
- Complies to LSZH requirements.

Clipsal Category 6A UTP Jacks Modular – Suits Clipsal Wall Plates







The Clipsal range of products are the next generation of data communications solutions. These modular jacks are colour coded for both 568A and 568B standards. Clear wire retaining caps are supplied and should be used to provide additional cable strain relief.

This modular connector is designed to be terminated using a Clipsal 110 tool.

DIMENSIONS



COLOUR AVAILABILITY



ELECTRICAL CHARACTERISTICS

Dielectric Strength	1,000V RMS at 60Hz for 1 minute	
Current Rating	1.5A maximum	
Insulation Resistance	200MΩ minimum	
Contact Resistance	1MΩ per contact	
Temperature Range	-40°C to +70°C	
Transmission Performance	ISO/IEC 11801 Class EA	
	AS/NZS 3080:2003 Class EA	

MECHANICAL CHARACTERISTICS

Modular Connector RJ45 8-Pin Connector FCC part 68, subpart F and IEC-60603-7 compliant Durability 750 insertion cycles minimum Material Phosphor bronze with 50 micro-inches of gold over 100 micro-inches nickel plating Format 30 mechanism non-shuttered **IDC Connector** IDC Connector Suitable insulation of 22 to 24 AWG (0.64 to 0.41mm) Insulation Diameter (Wire) 0.70 - 1.60mm Connector Material Phosphor bronze with nickel plating IDC Body and Cover Material Fire-retardant UL 94V-0, plastic



30RJ45SMA6A,(XX)

PRODUCT FEATURES

- Fully compliant to AS/NZS 3080, ISO/IEC 11801, and ANSI/TIA/EIA-568-C Series.
- Backward compatible with Category 5e and Category 6 products.
- Flexible locking tabs.
- UL 940-0 rated.
- Accepts solid 22 24 AWG diameter conductors.
- Copper shielded shutter cap to eliminate alien crosstalk associated with Category 6A.
- Retaining cap supplied for added cable strain relief.

CUSTOMER BENEFITS

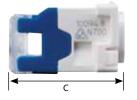
- Various colours for easier circuit identification.
- Can be used in Multi-User Telecommunication Outlet applications (MUTO) and Consolidation Points (CP).
- Clear insulation displacement connector caps allow for termination verification and assist in cable retention.

CATALOGUE NUMBER DESCRIPTION

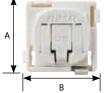
30RJ45SMA6A, (XX) Connector RJ45 Category 6A. Suits Clipsal wall plates.

For colour (XX): White Electric (WE), Black (BK), Blue (BU), Cream (CM), Battleship Grey (GB), Red (RD), Green (GR), Soft Grey (SG) and Yellow (YL).

Clipsal Category 6A UTP Jacks Shuttered Modular - Suits Clipsal Wall Plates







The Clipsal range of products are the next generation of data communications solutions. These shuttered modular jacks are colour coded for both 568A and 568B standards. Clear wire retaining caps are supplied and should be used to provide additional cable strain relief.

This shuttered modular connector is designed to be terminated using a Clipsal 110 tool.

DIMENSIONS



COLOUR AVAILABILITY



ELECTRICAL CHARACTERISTICS

Dielectric Strength	1,000V RMS at 60Hz for 1 minute	
Current Rating	1.5A maximum	
Insulation Resistance	200MΩ minimum	
Contact Resistance	1MΩ per contact	
Temperature Range	-40°C to +70°C	
Transmission Performance	ISO/IEC 11801 Class EA	
	AS/NZS 3080:2003 Class EA	

MECHANICAL CHARACTERISTICS

Modular Connector

RJ45 8-Pin Connector	FCC part 68, subpart F and IEC-60603-7 compliant	
Durability	750 insertion cycles minimum	
Material	Phosphor bronze with 50 micro-inches of gold over 100 micro-inches nickel plating	
Format	30 mechanism shuttered	
IDC Connector		
IDC Connector	Suitable insulation of 22 to 24 AWG (0.64 to 0.41mm)	
Insulation Diameter (Wire)	0.70 - 1.60mm	
Connector Material	Phosphor bronze with nickel plating	
IDC Body and Cover Material	Fire-retardant UL 94V-0, plastic	



30RJ45SMA6AS,(XX)

PRODUCT FEATURES

- Fully compliant to AS/NZS 3080, ISO/IEC 11801, and ANSI/TIA/EIA-568-C Series.
- Backward compatible with Category 5e and Category 6 products.
- Flexible locking tabs.
- UL 940-0 rated.
- Accepts solid 22 24 AWG diameter conductors.
- Copper shielded shutter cap to eliminate alien crosstalk associated with Category 6A.
- Retaining cap supplied for added cable strain relief.

CUSTOMER BENEFITS

- Various colours for easier circuit identification.
- Can be used in Multi-User Telecommunication Outlet applications (MUTO) and Consolidation Points (CP).
- Clear insulation displacement connector caps allow for termination verification and assist in cable retention.



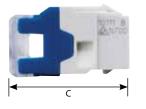
- IP22 rated.
- Prevents dust ingress. Protects against
- Protects against insect infestation.

CATALOGUE NUMBER DESCRIPTION

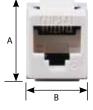
30RJ45SMA6AS, (XX) Connector RJ45 Category 6A Shuttered. Suits Clipsal wall plates.

For colour (XX): White Electric (WE), Black (BK), Blue (BU), Cream (CM), Battleship Grey (GB), Red (RD), Green (GR), Soft Grey (SG) and Yellow (YL).

Clipsal Category 6A UTP Jacks Keystone







The Clipsal Category 6A UTP keystone jack is a superior product delivering the best network performance when used in conjunction with other products in this range.

The Clipsal range of products are the next generation of data communications solutions. These UTP modular jacks are colour coded for both 568A and 568B standards.

This keystone connector is designed to be terminated using a Clipsal 110 tool.

DIMENSIONS

Product	A	В	C
RJ45SMA6A	23mm	15mm	36mm

COLOUR AVAILABILITY



ELECTRICAL CHARACTERISTICS

Dielectric Strength	1,000V RMS at 60Hz for 1 minute
Current Rating	1.5A maximum
Insulation Resistance	200MΩ minimum
Contact Resistance	1MΩ per contact
Temperature Range	-40°C to +70°C
Transmission Performance	Exceeds ISO/IEC 11801 Class EA
	AS/NZS 3080:2003 Class EA

MECHANICAL CHARACTERISTICS

Modular Connector	
RJ45 8-Pin Connector	FCC part 68, subpart F and IEC-60603-7 compliant
Durability	750 insertion cycles minimum
Material	Phosphor bronze with 50 micro-inches of gold over 100 micro-inches nickel plating
Format	Keystone non-shuttered
IDC Connector	
IDC Connector	Suitable insulation of 22 to 24 AWG (0.64 to 0.41mm)
Insulation Diameter (Wire)	0.70 - 1.60mm
Connector Material	Phosphor bronze with nickel plating
IDC Body and Cover Material	Fire-retardant UL 94V-0, plastic



RJ45SMA6A, (XX) Connector RJ45 Category 6A Keystone

For colour (XX): White Electric (WE), Black (BK), Blue (BU), Red (RD), Green (GR), Soft Grey (SG) and Yellow (YL).



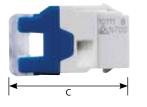
RJ45SMA6A,(XX)

PRODUCT FEATURES

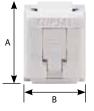
- Fully compliant to AS/NZS 3080, ISO/IEC 11801, ANSI/TIA/EIA-568-C Series.
- Backward compatible with Category 5e and Category 6.
- UL 94V-0 rated.
- Accepts solid 22 24 AWG diameter conductors.

- Various colours for easier circuit identification.
- Can be used in Multi-User Telecommunication Outlet applications (MUTO) and Consolidation Points (CP).
- Clear insulation displacement connector caps allow for termination verification and assist in cable retention.
- Suitable for use with the Clipsal Category 6A UTP patch panel RJ6AU/24PP and RJ6AU/24PPS.

Clipsal Category 6A UTP Jacks Shuttered Keystone







The Clipsal Category 6A UTP shuttered keystone jack is a superior product delivering the best network performance when used in conjunction with other products in this range.

The Clipsal range of products are the next generation of data communications solutions. These UTP modular jacks are colour coded for both 568A and 568B standards.

This shuttered keystone connector is designed to be terminated using a Clipsal 110 tool.

DIMENSIONS



COLOUR AVAILABILITY



ELECTRICAL CHARACTERISTICS

Dielectric Strength	1,000V RMS at 60Hz for 1 minute
Current Rating	1.5A maximum
Insulation Resistance	200MΩ minimum
Contact Resistance	1MΩ per contact
Temperature Range	-40°C to +70°C
Transmission Performance	Exceeds ISO/IEC 11801 Class EA
	AS/NZS 3080:2003 Class EA

MECHANICAL CHARACTERISTICS

Modular Connector	
RJ45 8-Pin Connector	FCC part 68, subpart F and IEC-60603-7 compliant
Durability	750 insertion cycles minimum
Material	Phosphor bronze with 50 micro-inches of gold over 100 micro-inches nickel plating
Format	Keystone shuttered
IDC Connector	
IDC Connector	Suitable insulation of 22 to 24 AWG (0.64 to 0.41mm)
Insulation Diameter (Wire)	0.70 - 1.60mm
Connector Material	Phosphor bronze with nickel plating
IDC Body and Cover Material	Fire-retardant UL 94V-0, plastic



RJ45SMA6AS,(XX)

PRODUCT FEATURES

- Fully compliant to AS/NZS 3080, ISO/IEC 11801, ANSI/TIA/EIA-568-C Series.
- Backward compatible with Category 5e and Category 6.
- UL 94V-0 rated.
- Accepts solid 22 24 AWG diameter conductors.
- Patent shutter.

CUSTOMER BENEFITS

- Suitable for use with the Clipsal Category 6A UTP patch panel RJ6AU/24PP and RJ6AU/24PPS.
- Shutter mechanism is easy to operate, simply insert the plug lead into the jack.
- Protection from dust ingress, insect infestation and the insertion of foreign objects.
- Various colours for easier circuit identification.
- For use in Multi-User Telecommunication Outlet applications (MUTO).
- Clear insulation displacement connector caps allow for termination verification and assist in cable retention.



- IP22 rated.
- Prevents dust ingress.
- Protects against insect infestation.

CATALOGUE NUMBER DESCRIPTION

RJ45SMA6AS, (XX) Connector RJ45 Category 6A Shuttered Keystone

For colour (XX): White Electric (WE), Black (BK), Blue (BU), Red (RD), Green (GR), Soft Grey (SG) and Yellow (YL).

Clipsal Category 6A UTP Patch Panels 24-Port

The Clipsal range of patch panels feature individual Category 6A modular jacks that are colour coded for both 568A and 568B standards. This patch panel is loaded with 24-mechs.

This patch panel should be terminated using the Clipsal 110 tool.

ELECTRICAL CHARACTERISTICS

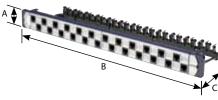
Dielectric Strength	1,000V RMS at 60Hz for 1 minute
Current Rating	1.5A maximum
Insulation Resistance	200MΩ minimum
Contact Resistance	1MΩ per contact
Temperature Range	-40°C to +70°C
Transmission Performance	ISO/IEC 11801 Class EA
	AS/NZS 3080:2003 Class EA

MECHANICAL CHARACTERISTICS

Modular Connector	
RJ45 8-Pin Connector	FCC part 68, subpart F and IEC-60603-7 compliant
Durability	1000 mating cycles
Material	Phosphor bronze with 50 micro-inches of gold over 100 micro-inches nickel plating
IDC Connector	
IDC Connector	Suitable insulation of 22 to 24 AWG (0.64 to 0.41mm)
Insulation Diameter (Wire)	0.70 - 1.40mm
Durability	10 insertions of any combination of wire gauge (2 wires per slot)
Connector Material	Phosphor bronze with nickel plating
IDC Body and Cover Material	Fire-retardant, UL 94V-0, plastic

DIMENSIONS

Product	A	В	C
RJ6AU/24PP	44mm	482mm	124mm



RJ6AU/24PP



RJ6AU/24PP

PRODUCT FEATURES

- Fully compliant to AS/NZS 3080, ISO/IEC 11801, and ANSI/TIA/EIA-568-B Series Connecting Hardware Standards.
- Powder-coated metal framework.
- Universal colour coding for 568A and 568B Standards.
- Removable rear cable management tray.
- Compatible with standard 19" equipment frames.
- Individual removable modular jacks.
- Staggered design to eliminate ANXT.
- Clear and flexible labeling system, numbered and blank sheets provided.
- Additional label refill sheets can be purchased seperatly, RJ6AU/24PPLS. Label printing software can be downloaded from clipsal.com/trade/downloads/ software. This will enable you to print the labels onto the template.

- Complete with all mounting and cable fixing hardware.
- Rear cable management tray is supplied loose, allowing the installer to fit after termination.
- The front labelling system provides a clear and efficient means of identifying circuits.
- Powder coated metal frame is robust and protects the patch panel from corrosion and scratching.
- Compliance with international standards gives the customer peace of mind that their network will perform to link, channel and application requirements.

CATALOGUE NUMBER	DESCRIPTION
RJ6AU/24PP	Patch Panel, 24–Port, Category 6A UTP, 568A/B
RJ6AU/24PPS	Patch Panel Shuttered, 24-Port, Category 6A UTP, 568A/B

Clipsal Category 6A UTP Cable

Clipsal 4–Pair Category 6A UTP cable delivers excellent network performance when used in conjunction with other Clipsal Category 6A UTP products.

The Category 6A UTP cable consists of 4-pairs of solid insulated copper 23 AWG (0.59mm) and is UL listed with a CM fire rating. It is designed for use in horizontal cabling situations and supplied in 305m (1,000ft) lengths.

The Category 6A UTP cable provides a significant margin above the minimum Category 6A near end crosstalk (NEXT) requirement of TIA/EIA 568-B.3-1 and ISO/IEC 11801.

PHYSICAL SPECIFICATIONS

Rated Temperature (°C)	75
Product Standard Certification	UL File E197794
Flammability Test	СМ
Application	Horizontal wiring in LAN
Reference Standard	EIA/TIA568 and ISO/IEC 11801, IEC61156-5
NVP %	65

CONSTRUCTION

Conductor	Solid bare copper
AWG	23
Conductor Diameter Nom. (mm)	0.59
Insulation	PE
Average Thickness (mm)	0.27
Min. Point Thickness (mm)	0.18
Insulation Diameter (±0.10mm)	1.15
Filler	PE
Jacket	PVC
Ripcord	Yes
Outer Diameter (mm)	8.5

ELECTRICAL CHARACTERISTICS

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB/100m)	PSELFEXT (dB/100m)	RL	Delay	PSANEXT	PSAACRF
1	2.1	74.3	72.3	67.8	64.8	20.0	570	67.0	67.0
4	3.8	65.3	63.3	55.8	52.8	23.0	552	67.0	66.2
8	5.3	60.8	58.8	49.7	46.7	24.5	547	67.0	60.1
10	5.9	59.3	57.3	47.8	44.8	25.0	545	67.0	58.2
16	7.5	56.2	54.2	43.7	40.7	25.0	543	67.0	54.1
20	8.4	54.8	52.8	41.8	38.8	25.0	542	67.0	52.2
25	9.4	53.3	51.3	39.8	36.8	24.3	541	67.0	50.2
31.25	10.5	51.9	49.9	37.9	34.9	23.6	540	67.0	48.3
62.50	15.0	47.4	45.4	31.9	28.9	21.5	539	65.6	42.3
100	19.1	44.3	42.3	27.8	24.8	20.1	538	62.5	38.2
200	27.6	39.8	37.8	21.8	18.8	18.0	567	58.0	32.2
250	31.1	38.8	36.6	19.8	16.8	17.3	536	56.5	30.2
300	34.3	37.1	35.1	18.3	15.3	16.8	536	55.3	28.7
400	40.1	35.3	35.1	15.8	12.8	15.9	536	53.5	26.2
500	45.3	33.8	31.8	13.8	10.8	15.2	536	52.0	24.2





MECHANICAL CHARACTERISTICS Test Object Jacket PVC Test Material Before Tensile Strength (Kg/mm²) ≥1.05 Bend radius (mm) Installed 75 After Installed 40 Pulling Tension 110N (25lbf) Storage Temp -20° to 75° Operating Temp -20° to 75° Installation Temp 0° to 58°

Characteristic Impedance (Ohms)	100 ± 15
1.0-500.0MHz Delay Skew	≤45
(ns/100m)	
Pair-to-Ground Capacitance Unbalance (pF/100m)	≤330
Max. Conductor DC Resistance 20°C (Ohms/km)	72
DC Resistance UnblaInced Max (%)	5

1

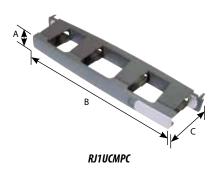
Clipsal Cable Management Panel Deep

The Clipsal Cable Management Panel is a 1 rack unit (1RU) item designed for use in 19" rack environments, managing patch cords that are connected between patch panels and/or active switches. The product is recommended for mounting between every second row of patch panels/active switches.

The unique clips provide a quick and simple means of installing the panel in the rack or cabinet. The rings have been designed to facilitate easy insertion and removal of the patch leads, necessary in dynamic environments where moves and changes are required.

DIMENSIONS

Product	A	В	C
RJ1UCMPC	44mm	482mm	100mm









Reinforced cable rings

PRODUCT FEATURES

- Clip-on cover (patented).
- Rack mount clips eliminate the need for cage nuts and screws.
- Cavities behind each ring provide additional space for cable slack.
- Additional depth on cable rings ensures compliance with minimum bend radius requirements.
- 100mm cable ring depth.

CUSTOMER BENEFITS

• Quick product installation using rack mount clips.

CATALOGUE NUMBER DESCRIPTION

Clipsal Side Rings

The side rings are typically used in frames or cabinets to provide vertical patch cord management. These rings have several features that make them stand out. The "ring and lock" design utilises proven plastic hinge technology to guide patch cords. These rings have unique teeth locks that are easy to open and snap back to lock tight again, should you need to open the rings.

The rings can be mounted with patch panels or directly onto the vertical panel mounts (VPM) of the equipment frame.

MECHANICAL CHARACTERISTICS

Test Object	Jacket
Ring Material	Polypropylene, Graphite Grey

DIMENSIONS

Product	Height	Width	Depth
RJ1HUSSR	42mm	43mm	65mm
RJ1HUDSR	42mm	43mm	130mm







RJ1HUSSR

PRODUCT FEATURES

- Graphite Grey.
- Teeth locks that provide easy access and security for patch cords.
- Available in 1RU deep and shallow versions.

- The key benefit is the "ring and lock" design which not only makes the loading and unloading of patch cords or cables easier but also secures them in place, keeping the cabinet neat and uncluttered. This makes circuit identification and administration for the customer far more efficient.
- The different two ring depths enable the customer to manage the cabinet or rack better, depending on the amount of patch cords being used.

CATALOGUE NUMBER	DESCRIPTION	
RJ1HUSSR	1RU Side Ring, Shallow	
RJ1HUDSR	1RU Side Ring, Deep	1



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