

Communications Cabling Management: “Whole-Of-Life Considerations”



Introduction

In most companies, the office is one of the largest investments or most significant elements of a company's annual expenditure.

Consequently the office, and the services in it, are generally viewed as a long term facility of the company, and must be designed to cater for the company's day-to-day operations both for day-one, and a decade or more into the future. Not only that, but since it represents such a large percentage of the company's expenditure, efficiencies must be optimised for the duration of its utilisation.

One of the most difficult office services to design long term for is the communications network; in particular, the digital network.

During the period a company occupies an office, the company will typically:

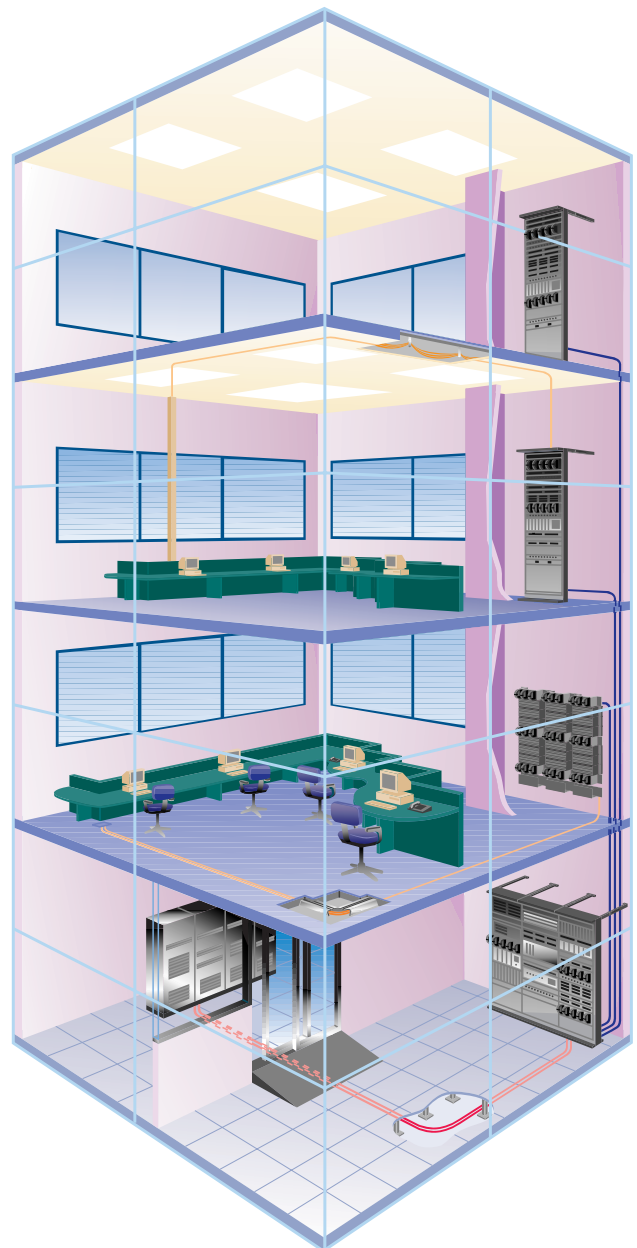
- Migrate networking architecture up to 3 times
- Update PC's up to 4 times
- Update software up to 5 times
- Restructure departments at least once
- Relocate all of its staff up to 8 times
- Change the network management team a few times.

All of this **should** happen with little or no interruption to business.

Network Infrastructure

In the real world we know that an enormous number of things can and do go wrong, which can create havoc for both the company and its staff.

To minimise the potential for problems for the company's network, the **Structured Cabling System** - the physical element of the network - should not only be designed with adequate performance capabilities **built into it to support technology migration over its lifetime, but also have the appropriate resources to support the day-to-day operations within the office.**



The Structured Cabling System is generally the most permanent aspect of a company's communications network. It is installed prior to the occupancy of the office, and remains in use for the entire period of the tenancy, or until the office is refurbished. Either way, it's usually a 5-10 year life span, and it must cater for the dynamics of the office, listed in part above.

Long Term Network Utilisation

Molex Premise Networks has always pioneered a long term, "whole-of-life" view to Structured Cabling Systems. In addition to developing high performance systems to cater for a company's long term migration plans, considerable emphasis has also been placed on a philosophy of premium cable management practises and products to effect the long term useability of the network.

Molex Premise Networks has long held the view that:

"Cabling Systems don't break down, they go out of control."

When cabling causes a failure in the network, it's usually to do with poor administration or insufficient attention to managing the patching facility. Physical cabling faults are usually very few, and rectified during commissioning, prior to tenancy. Even without failures, insufficient cable management is costly.

One of Australia's largest corporations experienced a saving of 75% in network administration costs by adopting appropriate cable management procedures using Molex Premise Networks' cable management products. Their experience is typical of how organisations can benefit from Molex Premise Networks' Whole-of-Life philosophy.

Office Churn Factor

Office "Churn Factor" (the number of Adds, Moves and Changes an office experiences annually, expressed as a percentage of the number of staff in the office) is typically 40-50% per annum in a medium to large office. Molex Premise Networks conducted a case study on a legal office recently where the Churn Factor has been consistently 80% per annum for a number of years. One large government organisation report a consistent Churn Factor of around 200% per annum!

This is the day-to-day reality offices have to deal with, and proper cable management in the communications infrastructure helps to maintain control in such a dynamic environment.

Molex Premise Networks' Cable Management Philosophy

Structured Cabling Systems must be designed for optimum performance and utilisation over the full duration of the office tenancy, not simply for the "day-one" installation. The end user must have at their disposal a user-friendly, manageable cabling system to facilitate the day-to-day operations – the adds, moves and changes – that are a fact of life in any office.

Molex Premise Networks' philosophy starts with a comprehensive understanding of the dynamic nature of the office environment, together with the impact this has on the network infrastructure. This insight leads to system and product designs that deliver full infrastructure management, without hindering the natural dynamics of the office. Consider the elements of Molex Premise Networks' cable management philosophy:

1. System Documentation

- As-installed records, delivered to the tenant
 - Marked up floor plans
 - Numbering scheme synopsis
 - Rack layout drawings
 - Cross connect log
- Intelligent Numbering Scheme documentation and user training
 - Horizontal Cabling
 - Distribution Frame #
 - Group #
 - Channel #

DF #	Group #	Channel
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- Vertical (Backbone) Cabling
 - Originating Distribution Frame #
 - Terminating Distribution Frame #
 - Cable #
 - Channel #

ODF #	TDF #	Cable #	Channel
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- System Equipment
 - Device #
 - Group #
 - Port #

Device #	Group #	Port #
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Molex Premise Networks Products:

UPF

- Frame/Cabinet incorporating built in vertical cable management using unique tubular "arms" to route patch cables
- Configurable as open frame or fully enclosed cabinet
- Cable bend radius maintained within industry standards to prevent signal degradation
- Integrated cable looming grids on sides
- Overhead baying kit to correctly channel cables in multiple rack installation
- Innovative accessories including clip-on service shelf, baying kit, busbar assemble, and rear equipment mounting rails

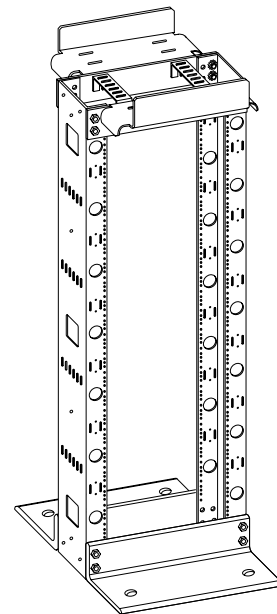
Refer to Universal Patching Frame Brochure for further details



Omega Rack

- Open Bay Rack redesigned with cable management in mind
- Accommodates all Molex Premise Networks cable management products
- Slotted side rails for Velcro tie wraps to secure incoming horizontal cables without over-compression
- Inbuilt top cable management tray
- Deep side rails providing extra space for horizontal cable routing

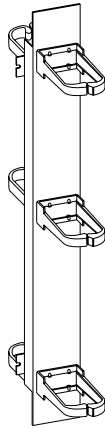
Refer to Omega Rack Data Sheet for further details



Vertical Cable Managers

“Between The Rack” and “Side Of Rack” vertical cable management panel, featuring large rings for up to 100 patch cables. Supports up to 42U racks. Bolts either side directly to open bay racks. Not suitable for cabinets.

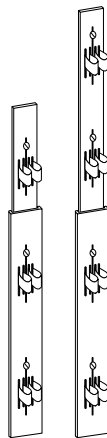
Refer to Vertical Cable Managers Data Sheet for further details



Vertical Velcro Panel

Quick action Velcro rings enable easy cable relocation in a manageable format, without overcompression of cables.

Refer to Velcro Cable Organisers Data Sheet for further details

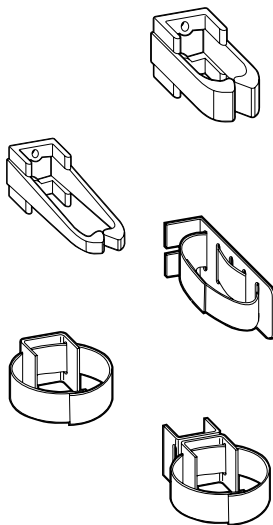


Side Rings

Variety of cable management rings which bolt directly to front of frame to form vertical channels. Bolt holes feature 1U spacing for universal mounting, and can be mounted directly over rack mount panels.

- Deep ring (ABS)
- Shallow ring (ABS)
- Fixed Mount Velcro ring
- Swivel Mount Velcro ring

Refer to Velcro Cable Organisers Data Sheet for further details.



5. Horizontal Cable Management Products

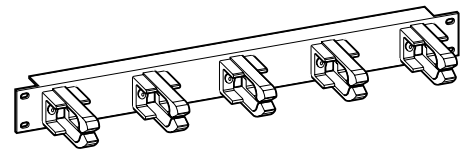
A horizontal channel above or below patch panels should be created to neatly route patch cables away from patch panel outlets. The patch cables should be routed to the cable management panel either directly above or below so as to ensure that the patching field is not obscured.

The size of the rings should be large enough to accommodate the maximum number of patch cables that may be in each cable management channel. For example, in a patching field of 24 port patch panels, the channel should accommodate at least 48 patch cables. These patch cords should be loosely contained in the channel so that any patch cable can be easily removed at any time. At no time should the cable management panel be tightly packed with patch cables.

Molex Premise Networks Products:

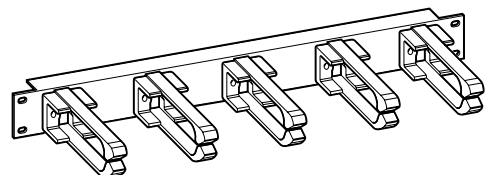
1U Shallow Ring Run Panel

- ABS rings
- Comfortably accommodates 25 patch cables
- Simple snap-in and snap-out movement of patch cables
- Available with or without cover



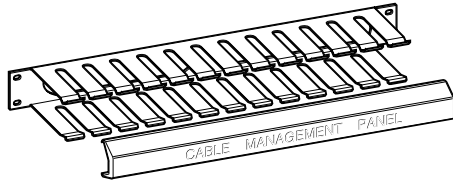
1U Deep Ring Run Panel

- ABS rings
- Comfortably accommodates 50 patch cables
- Simple snap-in and snap-out movement of patch cables
- Available with or without cover



1U Cable Management Panel

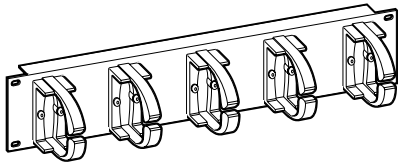
- Powder coated steel “fingers”
- Comfortably accommodates 50 patch cables
- Complete with front cover
- Individual slots direct patch cables to patch panel outlet



Refer to Cable Management Panel Data Sheet for further details

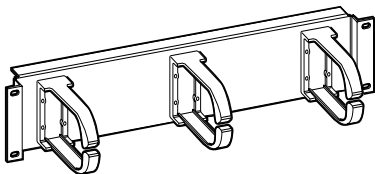
2U Shallow Ring Run Panel

- ABS rings
- Comfortably accommodates 50 patch cables
- Simple snap-in and snap-out movement of patch cables
- Available with or without cover



2U Deep Ring Run Panel

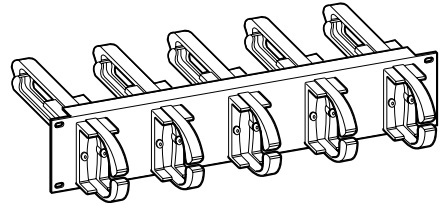
- ABS rings
- Comfortably accommodates 100 patch cables
- Simple snap-in and snap-out movement of patch cables
- Recessed panel to reduce front projection
- Ideal for horizontal trunk in multi-rack installations
- Available without cover only



Refer to 2U Double Density Ring Run Panel Data Sheet for further details

2U Shallow Ring Run Front / Deep Ring Run Rear Panel

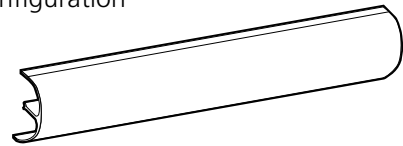
- ABS rings
- Comfortably accommodates 50 patch/horizontal cables
- Simple snap-in and snap-out movement of patch cables
- Facilitates front and rear cable management in single compact panel



Refer to 2 Position Front/and Rear Ring Run Panel Data Sheet for further details

Ring Run Covers

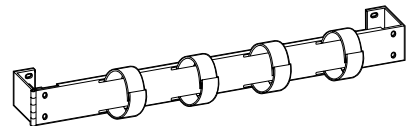
- Snap on covers for 1U and 2U Ring Run Panels to provide neat appearance
- Easy removal for access to patch cables for system reconfiguration



Refer to Ring Run Covers Data Sheet for further details

Velcro Cable Management Panel

- Velcro rings
- Fast action Velcro patch cable retention
- No over-compression on patch cables
- Available in fixed or hinged panel



Refer to Velcro Cable Organisers Data Sheet for further details

6. Coloured Patch Cables

Contrary to other manufacturers' recommendations, **coloured outlets on a patching field to denote applications is wrong**. The patching field is designed to be universal, and should not be designated for a specific function such as "voice" or "LAN." This is a "day-one-only" mentality. Over the decade or so of use, most of the patch panel outlets will be used for a wide range of differing functions which, if labelled for a specific function, will create confusion or limit the flexibility of the Structured Cabling System.

Coloured outlets may be useful at "day-one", but in the long-term, a uniform colour in a patch field with an intelligent layout and identification sequence provides a more useful and manageable patching system.

To more effectively identify services at the patching field, Molex Premise Networks recommends using coloured patch leads. This enables quick and accurate identification of services, minimising errors in administering adds, moves and changes. Molex Premise Networks patch leads are available in a variety of colours, expressly designed for application designation.

Molex Premise Networks' primary recommendation for patch cable colour-code designation is:

Grey – Voice Blue – LAN Red – Modem

Where multiple services exist in the same office, the wider variety of patch cable colours available may be employed to designate each service: Green, Yellow and White.

Stored in the wiring closet or computer suite, should be a collection of patch cables in various lengths in the appropriate colours so the end user may use the correct length and colour for adds, moves and changes.

Conclusion

Adopting a long term approach to the network infrastructure:

- Enables the end user to easily and efficiently manage their own Structured Cabling System to cater for the day-to-day dynamics of their office
- Minimises the risk of network failure
- Maintains control of the network for the entire duration of the office tenancy
- Reduces maintenance costs in network reconfiguration
- Facilitates network migration.

All of this can be achieved by adopting Molex Premise Networks' "Whole-of-Life" cable management philosophy, covering system design, management procedures, documentation and product selection.

Molex Premise Networks Cable Organiser Products

Part No.	Description
Racks/Frames	
UFP-00001	Universal Patching Frame - 42 arm (additional UPF equipment listed in brochure)
RAA-00004	Omega Rack
Vertical Cable Management	
CMA-00001	Between The Rack (BTR) Panel
CMA-00002	Side Of Rack (SOR) Panel
25.B0564	Velcro Vertical Cable Organiser Panel
25.B0284	1U Side Ring
25.B0364	1U Side Ring Deep
25.B0524	Velcro Organiser Ring 89mm
25.B0534	Velcro Organiser Ring 30mm
25.B0544	Velcro Organiser Ring - Centre Screw
25.B0554	Velcro Organiser Ring - Centre Swivel

Part No.	Description
Horizontal Cable Management	
25.B016G	1U Ring Run Panel
25.B035G	1U Deep Ring Run Panel
25.C001G	Cable Management Panel
25.B013G	2U Ring Run Panel
25.B058G	2U Double Density Ring Run Panel
25.B059G	2 Position Front and Rear Ring Run Panel
25.B045G	1U Ring Run Panel with cover
25.B047G	Cover for 1U Ring Run Panel
25.B044G	2U Ring Run Panel with Cover
25.B046G	Cover for 2U Ring Run Panel
25.B0494	Velcro Cable Organiser Panel - 19" mount
25.B0484	Velcro Cable Organiser Panel - 23" mount
25.B0574	Hinged Velcro Cable Organiser Panel - 19" mount
25.B0504	Cable Organiser Bar - 38mm
25.B0514	Cable Organiser Bar - 89 mm



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MOLEX PN QLD Mobile: 0417 193 443 Tel/Fax: +617 3369 3417	MOLEX PN MALAYSIA Tel:+603 773 7317 Fax:+603 773 7303	MOLEX PN KOREA Tel:+82 2 542 5054 Fax:+82 2 542 5078
MOLEX PN WA Tel:+618 9304 7298 Fax:+618 9304 7298	MOLEX PN BEIJING Tel:+86 10 65229222 Fax:+86 10 65254357	MOLEX PN SHANGHAI Tel:+86 21 58549123 Fax:+86 21 58549222

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