

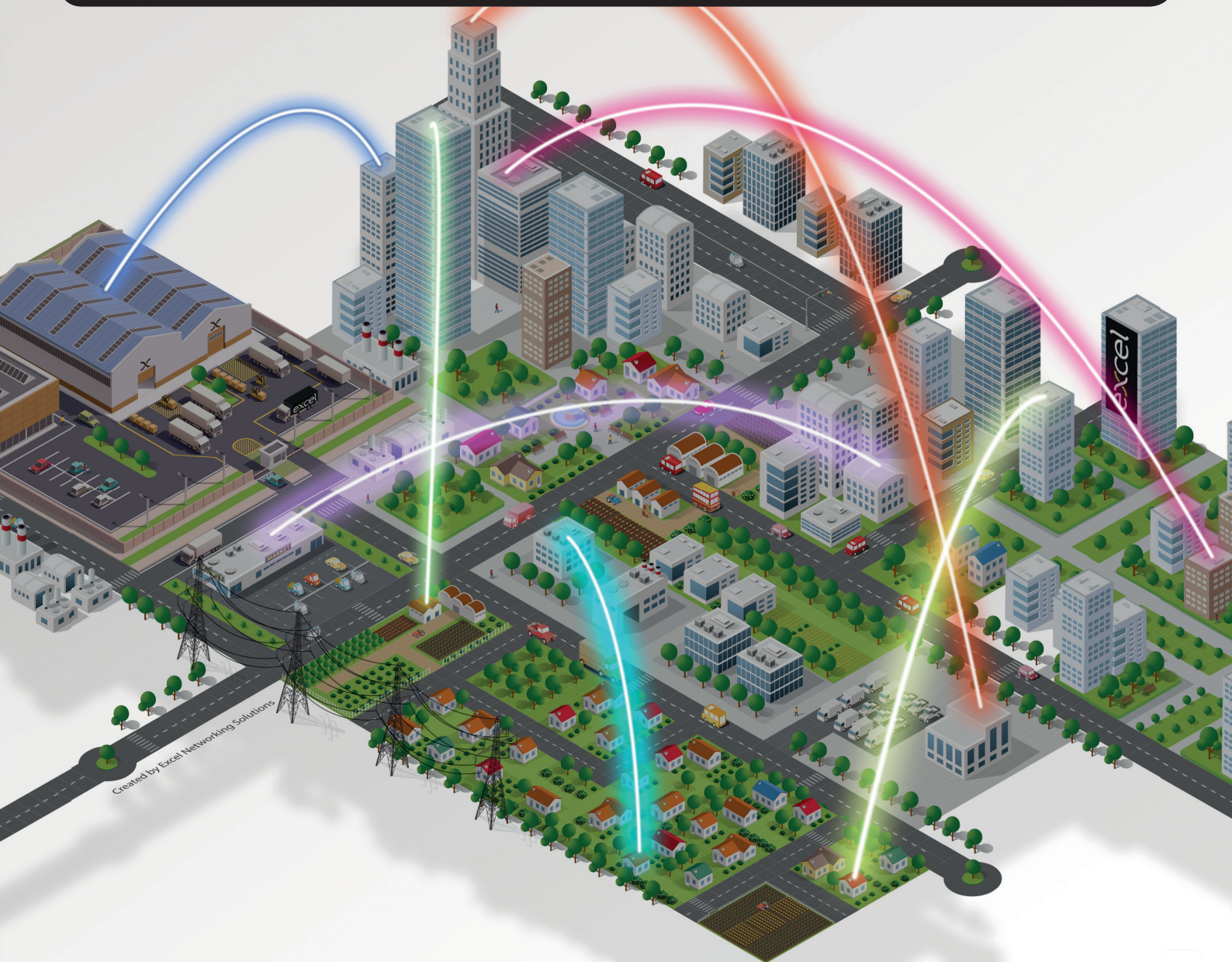
# The Excel PON Solution

Delivering Connectivity, Performance and Innovation at the Speed of Light

Excel is a world-class premium performing end-to-end infrastructure solution - designed, manufactured, supported and delivered - without compromise.

[www.excel-networking.com](http://www.excel-networking.com)

**excel**  
without compromise.



# The Excel Passive Optical Network Solution

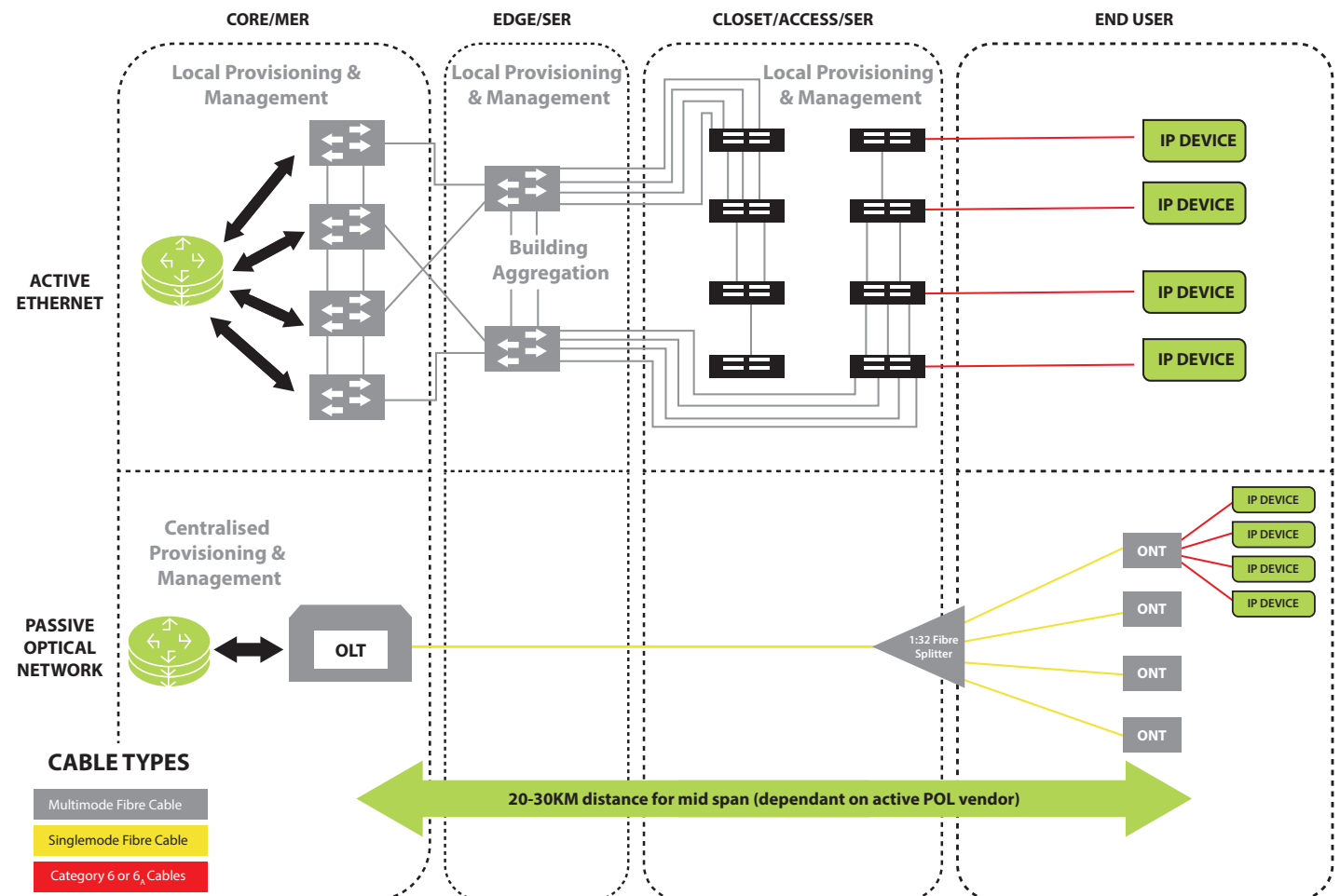
Excel Networking is a world-class, premium performance end-to-end infrastructure solution, now offering a broad range of high-quality, high-performance Passive Optical Network (PON) Solutions suitable for both the residential and enterprise environments.

Passive Optical Network (PON) is an umbrella industry term for fibre-based access networking architecture that is designed for both residential environments (FTTx) and enterprise environments (POL).

Excel offers a comprehensive selection of PON solutions, delivering fibre to a range of environments across FTTx and POL network infrastructure systems. Regardless of the size of the building, the Excel range of PON products offers numerous options in fibre connectivity and distribution.

## Why Choose a PON Solution from Excel?

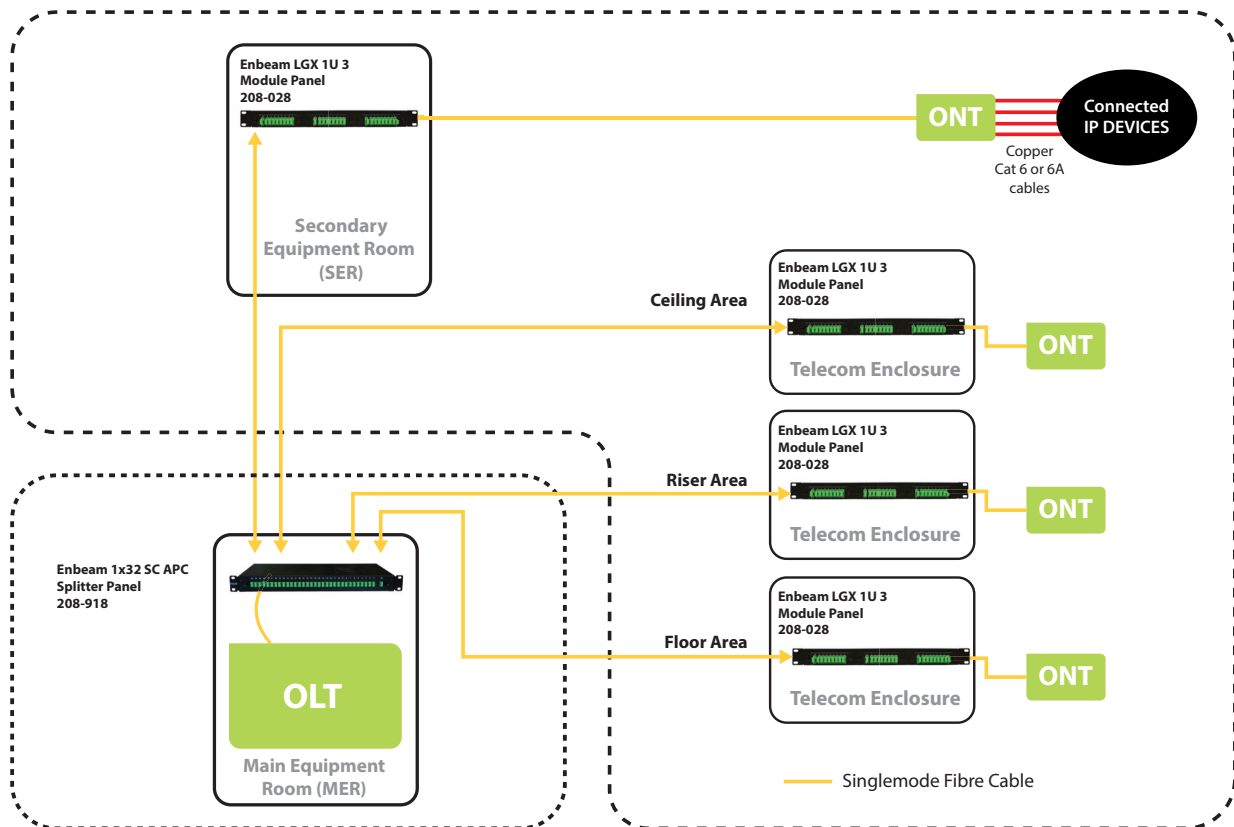
The below diagram shows a comparison between a traditional LAN topology and a PON infrastructure solution. In the PON solution, the aggregation switch used on the traditional LAN is replaced with the OLT, copper cabling is replaced with fibre cabling and the access switch is replaced with passive optical splitters. The ONT then provides users with either wired or wireless data, voice and video services.



Key	
MER - Main Equipment Room	SER - Secondary Equipment Room
OLT - Optical Line Network	ONT - Optical Network Terminal

## What is PON?

A Passive Optical Network (PON) system consists of an Optical Line Terminal (OLT) that connects several Optical Network Terminals (ONTs) together using a passive Optical Distribution Network (ODN). PON is the highest speed, longest life, lowest cost network infrastructure available in the market, offering a genuine future-proof access network with flexibility and upgrade capability well into the future.



### OLT

#### *Optical Line Terminal*

Contains a central processing unit, passive optical network cards, a gateway router and voice gateway cards. It can transmit a data signal to users at 1490 nm. This signal from each port can serve up to 128 ONTs, at a range of up to 12.5 miles by using optical splitters.

### ONT

#### *Optical Network Terminal*

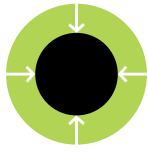
A network interface device used with fibre-optic systems. The ONT is the demarcation point between the fibre-optic network and the subscriber premises Ethernet wiring to the subscriber router. The ONT converts optical signals into electrical signals, and vice-versa.

### Optical Splitters

PON is based around fibre cabling and splitters, delivering signals to multiple access points throughout a network across a range of distribution methods, including Fibre-to-the-Home (FTTH), Fibre-to-the-Office (FTTO) and Fibre-to-the-Kerb (FTTK), amongst other FTTX Solutions. For a full list of FTTX abbreviations, please refer to the Acronyms and Abbreviations list at the end of this brochure.

PON does not include powered switching equipment and uses optical splitters to split and collect optical signals as they move through the network. Powered equipment is required only at the source and receiving ends of the signal within a Passive Optical Network made up from OLTs connected to several ONTs.

## Key Benefits of Excel's PON Solution



### Space and Cost-Saving Solution

- Reduction in labour requirements for installation
- No need for SER's - Increased usable space for revenue generation

PON solutions have some engaging and compelling arguments when it comes to cost and space savings, reducing overall Total Cost of Ownership.

A PON Solution relies on less physical equipment to create a complete solution. Reliance on PLC splitters in the mid span of the network removes the need for aggregation switches. With a PLC splitter occupying considerably less footprint than an aggregation switch, the associated housing equipment is reduced also. Fewer switches, smaller enclosures and less real-estate footprint requirement allows for a more cost-effective use of space, helping to create considerable CapEx savings in the upfront spend of network deployments.

Our range of Environ enclosures have been designed specifically for a PON Solution, offering consolidated points of connection that will fit into utility spaces and cable routes, removing the need for additional space to be allocated throughout the building infrastructure, such as Secondary Equipment Rooms (SERs).

What's more, the nature of a PON solution is passive, meaning the costs associated with power and cooling systems is taken out of the equation, leading to increased OpEx savings and increased Return on Investment (ROI). With absolute central management from the OLT to all ONTs, further savings can be achieved by reduced labour costs; as everything is centrally managed, skilled and trained network engineers don't need to waste time travelling from switch to switch to configure the ports.



### Energy Efficient

- Reduction in power consumption
- Reduction in cooling requirements

A typical PON Solution has a reduced cooling requirement and a lower power consumption rate than a traditional LAN network, as there is no power requirement in the mid-span.



### High Bandwidth

Typically, within a PON solution the service is split into two signals; downstream and upstream. The solutions deliver 2.5Gbps and 1.25Gbps respectively. This is a considerable improvement in internet connectivity to what traditional technology offers, taking a standard home that currently experiences speeds of - when on the higher level of offering from an ISP - 100Mbps to a speed that is ten times faster. The systems utilise Dynamic Bandwidth Allocation technology, which can leverage unused bandwidth with the system to allow users to get more effective upstream bandwidth when needed.



### True Roadmap for 10G, 40G, 100G Networks

PON operates on Singlemode fibre, which by design is future proof with the fibre being able to handle not just 2.5Gbps, but also 10, 40 and even 100Gbps network speeds. When the emerging technology is here, the fibre will be ready, willing and able to take the load.



### Superior Performance and Scalability

The passive optical splitters provide higher efficiency by allowing each fibre optic strand to be split into 32 signals that can serve up to 128 end ports.



### Longer Distances

The Excel PON Solution supports the long-reach service coverage to overcome the challenges encountered with twisted pair cables.



### Easier Network Management

- Single point of network management
- Reduced points of failure
- Reduction in installation and termination time (due to fewer cables being installed)

With fewer components to create a complete end-to-end solution, the whole network is easier to manage. The centralised positioning and management in a PON network creates a simpler solution. If a problem arises in a PON solution, pinpointing the source of the issue is easier than in a traditional LAN network.





**Less Physical Equipment Required**

- Removal of additional cabinets and switches
- Reduction in cable management and long copper cabling runs

The Excel PON Solution reduces the reliance on and cost of physical equipment in the fibre distribution network. No physical switches are necessary and because a single fibre can be split into many different signals, less fibre is required in the network. A PON network requires less floor space and removes the need for SERs, helping to create considerable CapEx and OpEx savings from the design of the network through to the ongoing management of the solution.



**Increased Security**

- A PON Solution is AES-128 advanced encryption supported
- Secure PON applications supported
- Advanced port and user identification features

The use of fibre optic cabling in a PON solution ensures the utmost security for data transmission, in comparison to a traditional LAN network.

# Applying Excel’s PON Solution

Across a typical city, there are many different types of building and installation environments that require an infrastructure solution to provide their wired or wireless services. High-and low-density residential areas, business districts and multi-tenant environments all have a need for high-speed connectivity to the network for internet, telecoms, CCTV and other services, yet these requirements differ in each type of setting.

Delivering fibre to a single house will present a different set of challenges to delivering fibre to a large apartment block, which may require different infrastructure components than an installation in a large office environment or a shopping centre. With these considerations in mind, a “one solution fits all” approach isn’t always possible.

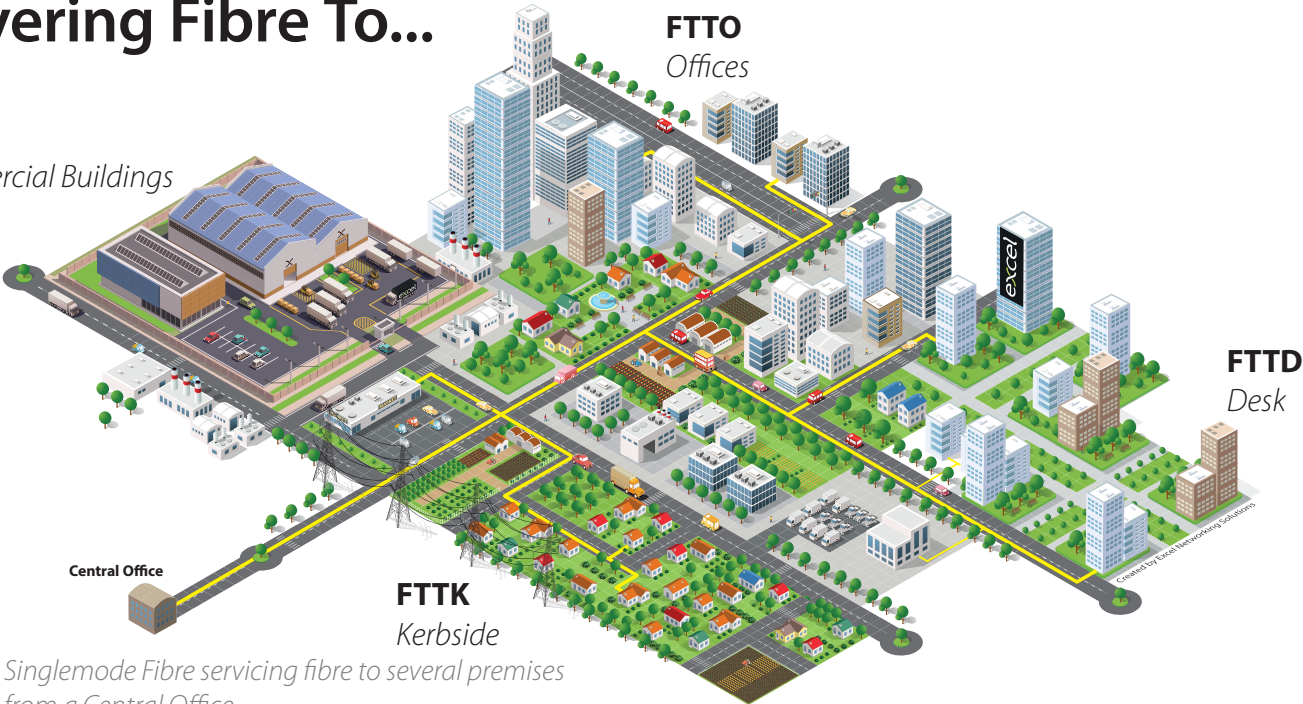
# Delivering Fibre To...

**FTTO**

*Commercial Buildings*

**FTTO**

*Offices*



— Singlemode Fibre servicing fibre to several premises from a Central Office

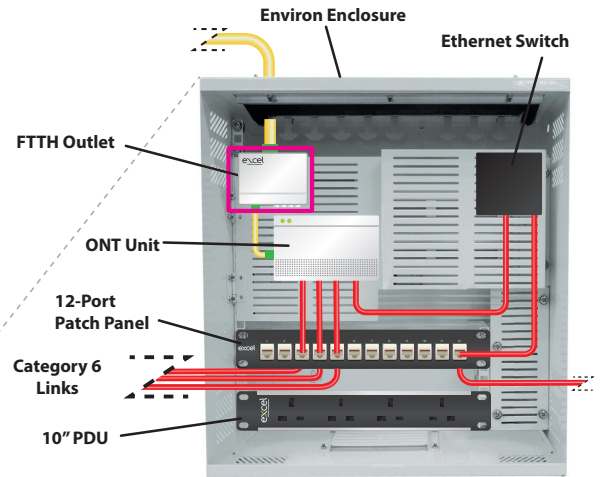
**FTTH**

*Home (SDU or MDU)*

Excel presents a wide range of products and flexible deployment options across the full range of PON applications. The following diagrams demonstrate how the Excel PON solution can be installed into different environments, highlighting the flexibility and modularity of the products.

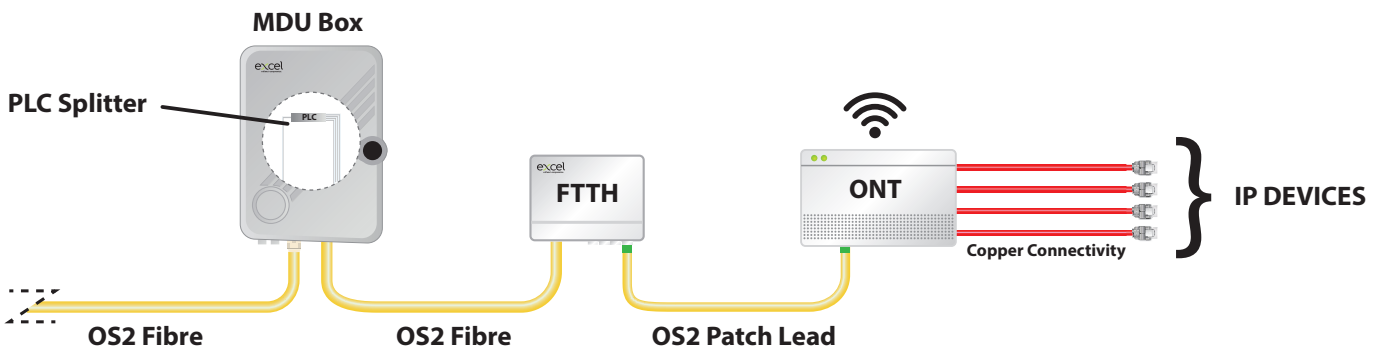
# Multi-Dwelling Unit (MDU)

This diagram suggests how the products could work together in a typical installation of the Excel PON Solution in an MDU environment, such as a large apartment building, a small block of flats or a student accomodation building.



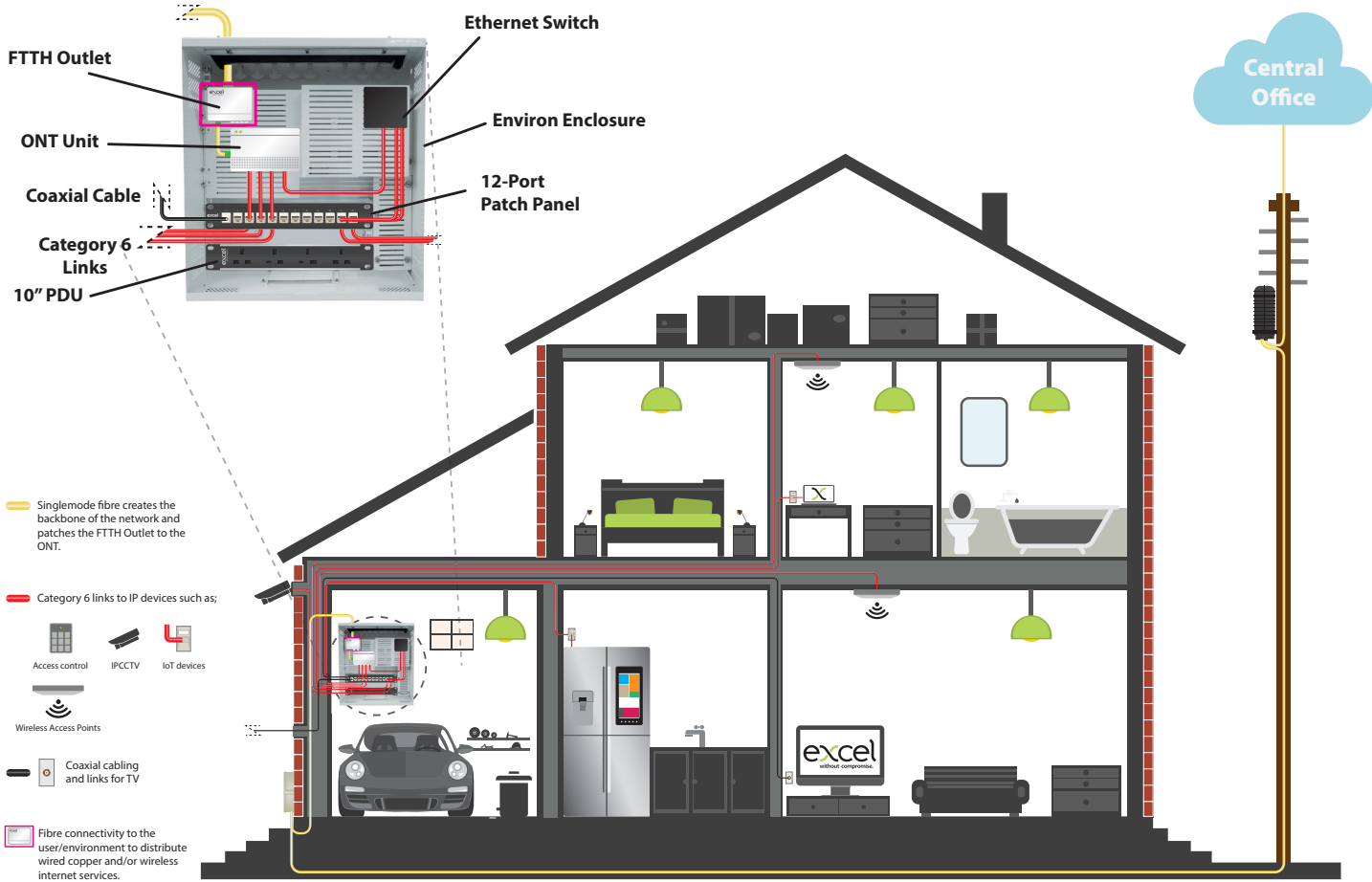
- Singlemode fibre creates the backbone of the network and patches the FTTH Outlet to the ONT.
- Category 6 links to IP devices such as;
  - Access control
  - IP Lighting
  - IPCCTV
  - IoT devices
  - Wireless Access Points
- Fibre connectivity to the user/environment to distribute wired copper and/or wireless internet services.

## Product Deployment Schematic

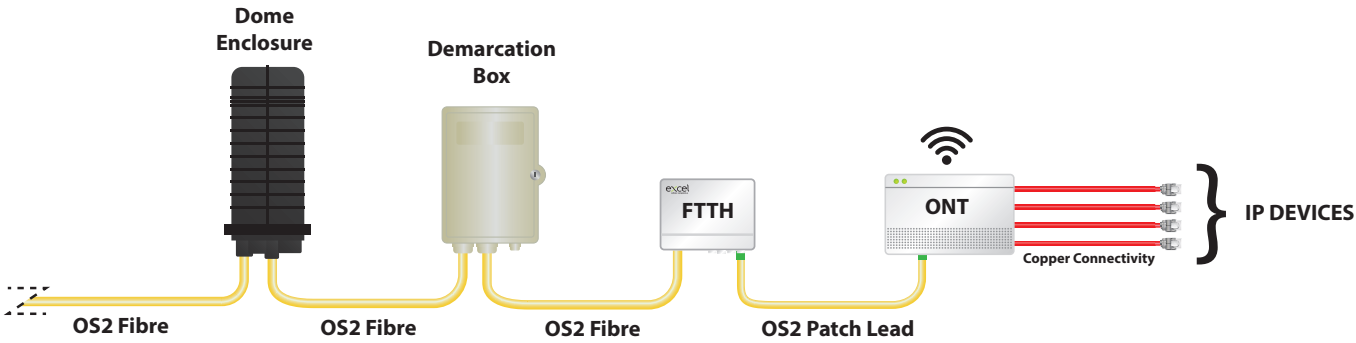


# Single Dwelling Unit (SDU)

This diagram suggests how the products could work together in a typical installation of the Excel PON Solution in an SDU environment, such as a residential home.

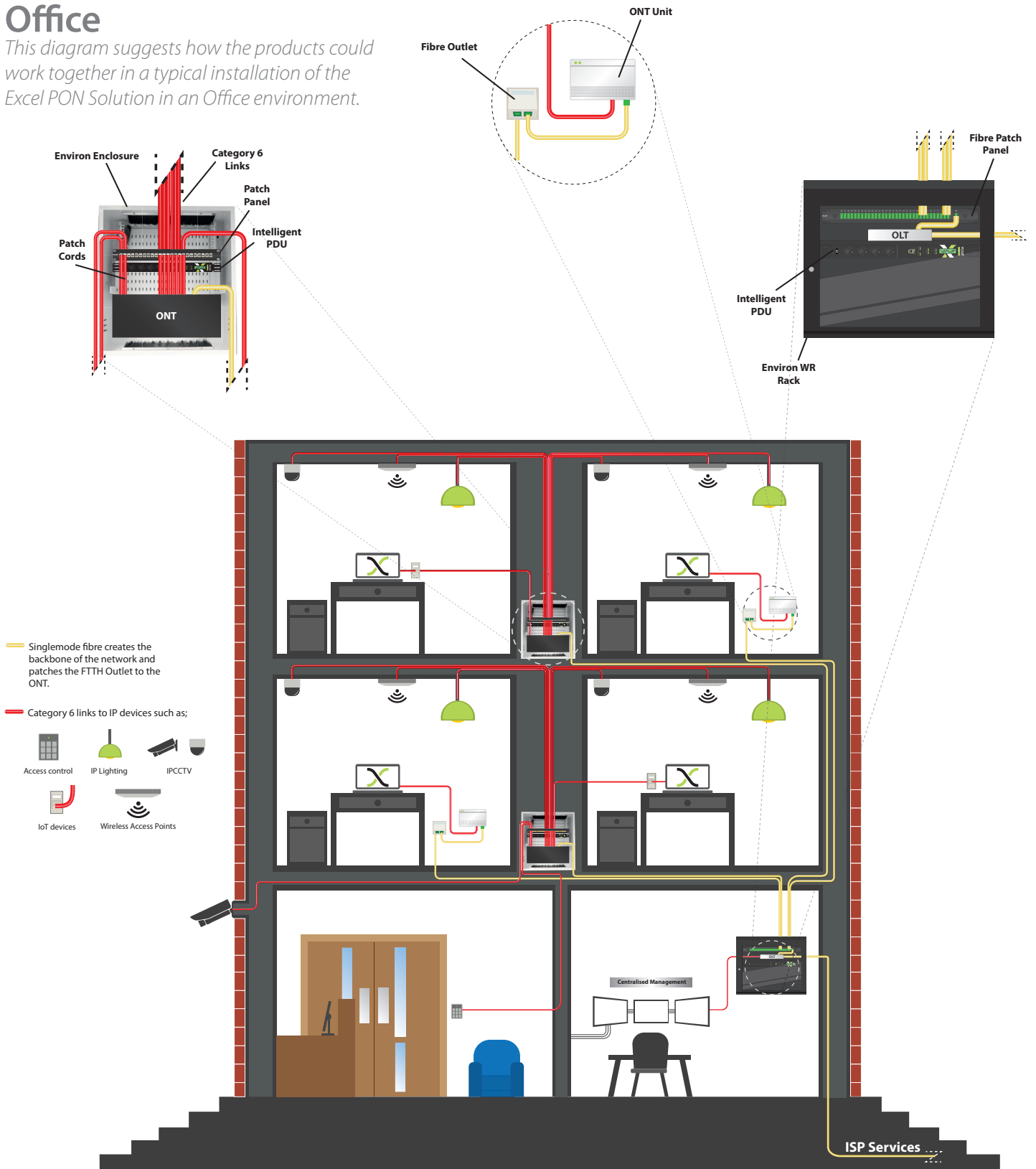


## Product Deployment Schematic

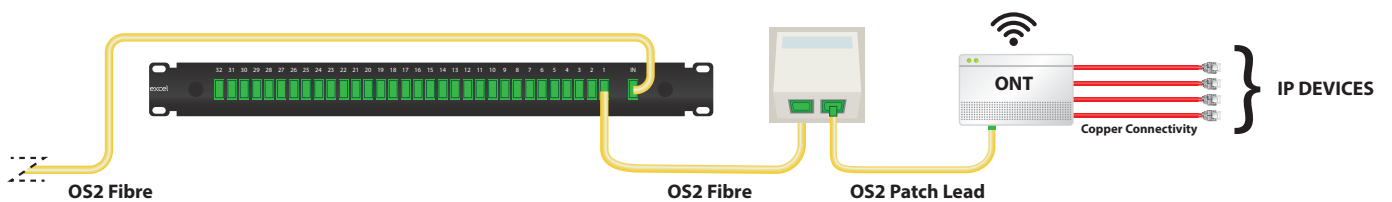


# Office

This diagram suggests how the products could work together in a typical installation of the Excel PON Solution in an Office environment.



## Product Deployment Schematic





# The Excel PON Solution Offering

In addition to the comprehensive Excel copper and fibre portfolio, we have launched a new selection of passive components suitable for a PON network, offering a complete end-to-end solution in passive optical infrastructure.

From the equipment room to the work area and everywhere in between, Excel offers high reliability and low cost of ownership. With minimum materials providing high bandwidth over long distances, the result is an efficient network that can benefit your application.

The complete Excel PON Offering is available in the A5 Excel PON Catalogue. Specification sheets for each product are available electronically through the Excel website: [www.excel-networking.com](http://www.excel-networking.com).



## Environ Enclosures

The Excel range of Environ Enclosures has been designed to be a multifunctional set of products, which can form part of a network in multiple locations. With the ability to change the internal structures to fit most applications within a passive optical network and edge of network cabling designs, these enclosures can be adapted to house either fibre or copper (or both) within a confined space. These enclosures are suitable for risers, equipment rooms and remote locations.

Part No	Description	Dimensions (mm - H x W x D)	U Size and Capacity
100-658	Environ Residential Consolidation Enclosure	453 x 430 x 160	1U - up to 12 copper ports
100-653	Environ Small Enclosure	300 x 300 x 100	DIN Rail Mountable Only - up to 24 copper ports
100-651	Environ Medium Enclosure	604 x 400 x 125	2U - up to 24 copper ports
100-659	Environ Large Enclosure*	650 x 600 x 250	5U - up to 120 copper ports

\* Features a 19" mounting rail

Multiple fibre ports can be installed within these enclosures

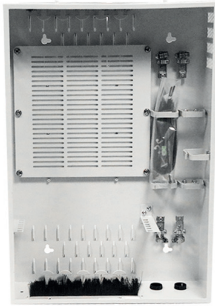
See the complete range of Environ Racks on Page 18



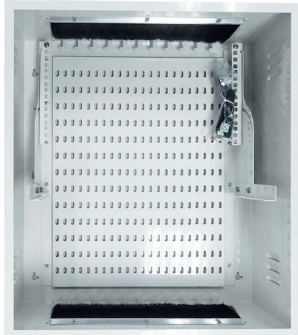
100-658



100-653

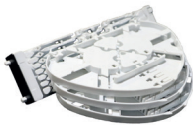


100-651



100-659

Part No	Description
200-128	Enbeam Splice Tray and Holder Conversion Kit - 48 fibres
200-129	Enbeam Splice Tray and Holder Conversion Kit - 240 fibres



200-128



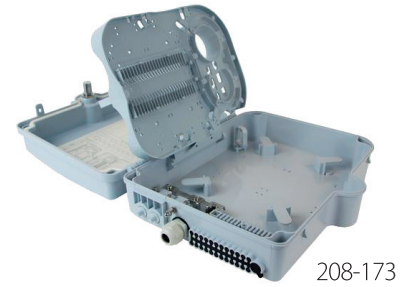
200-129

## Floor Distribution Boxes

### MDU Box

The Excel Enbeam MDU Box terminates up to three optical fibre cables offering a designated space for splitters and up to 48 fusion splices. Housing up to 24 adaptors for internal or external applications, the MDU Box offers a cost-effective solution within the FTTX network.

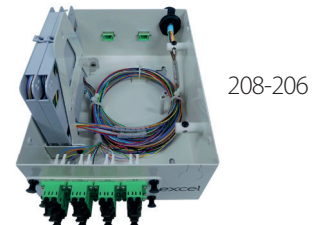
Part No	Description
208-173	Enbeam MDU Box Unloaded (up to 48 fibre)
208-174	Enbeam MDU Box Loaded 12 x SC/APC Simplex Adaptors
208-175	Enbeam MDU Box Loaded 24 x SC/APC Simplex Adaptors
Compatible Adaptors	
200-566	Excel Enbeam Fibre SC/APC Simplex Adaptor
200-381	Excel Enbeam Fibre SC Simplex Flangeless Shuttered Adaptor



### Demarcation Box

The Enbeam Demarcation Box has been designed to be wall or DIN rail mounted with the capacity to hold 12 to 24 fibres. The flexibility to use tight buffered and/or loose tube cabling and MTP/MPO fan-outs makes this enclosure suitable for multiple applications. With top and bottom cable entry, the Excel Demarcation Box can pass cables through the enclosure, allowing fibres to be broken out and spliced. The hinged splice tray platform allows full and easy access to connections and enables storage of excess fibre whilst maintaining the correct bend radius.

Part No	Description
208-206	Enbeam 12 SC Simplex SM APC (Green) Demarcation Box



### DIN Rail Box

The Enbeam DIN Rail Box has been designed to be wall or DIN rail mounted with the capacity to hold 12 to 24 fibres. The flexibility to use either tight buffered and/or loose tube cabling makes this enclosure suitable for multiple applications. The hinged splice tray platform allows full and easy access to connections and enables storage of excess fibre whilst maintaining the correct bend radius.

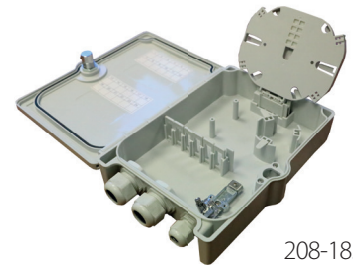
Part No	Description
208-211	Enbeam 12 SC Simplex SM APC (Green) DIN Rail Box



## Splice Enclosures

The Excel Lockable IP65 Splice Enclosure can be used to terminate fibre to the internal patching field; 24 single fibres when using LC Quad adaptors and 12 when using SC Duplex adaptors. The enclosure also offers space to house a PLC splitter offering a flexible solution for any application. The robust ABS enclosure can be installed in most indoor and outdoor applications.

Part No	Description
208-183	Enbeam IP65 Lockable Splice Enclosure 24 Fibre
Compatible Adaptors	
200-567	Excel Enbeam SC/APC Duplex Adaptor Singlemode
201-138	Excel Enbeam LC Quad Adaptor Multimode



208-183

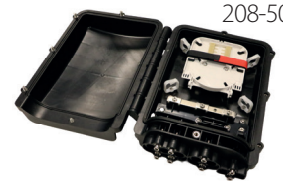
## Exterior Splice Enclosures

The Enbeam Exterior Splice Enclosures have been designed to allow up to 288 fibres to be spliced and housed within an IP68-rated durable enclosure, which is ideal for harsh environment applications. The enclosure is mechanically sealed via compression glands to allow re-entry without compromising the integrity of the unit. The enclosures can be mounted in several ways using different mounting brackets; wall, pit, pole and aerial. The largest of the enclosures can be expanded to take up to 408 fibres by increasing the number of trays.

Part No	Description
208-500	Enbeam 48 Fibre Dome Enclosure
208-501	Enbeam 72 Fibre Dome Enclosure
208-502	Enbeam 96 Fibre Dome Enclosure
208-503	Enbeam 144 Fibre Dome Enclosure
208-504	Enbeam Hinged Wall Mount Dome Enclosure 60 Splice
208-506	Enbeam 48 Fibre Splice Enclosure (Flat Type)
208-507	Enbeam 144 Fibre Splice Enclosure (Flat Type)
208-508	Enbeam 288 Fibre Splice Enclosure (Dome Type)



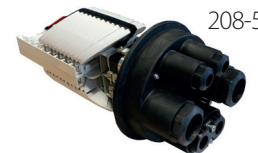
208-502



208-504



208-506



208-508

The Enbeam Fibre Dome Enclosure has been designed to allow up to 120 fibres to be spliced and housed within an IP68 rated durable enclosure ideal for harsh environment applications. The enclosure is mechanically sealed via compression glands allowing re-entry without compromising the integrity of the unit. The enclosures can be mounted in several ways using different mounting brackets (see additional mounting options); wall, pit, pole and aerial. The enclosure can also house PLC splitters for use in PON applications. Each enclosure has an independent patching field for up to 32 SC Simplex adaptors allowing connections to be made directly from the enclosure.

Part No	Description
208-505	Enbeam Enclosure for 32-way Splitter (Dome Type)



208-505

## Splitters, Panels and Modules

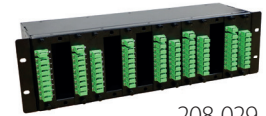
### Modular Panels and Cassettes

The Excel 3U (14 Modules) and 1U (3 Modules) Splitter Panels have been designed to fit 19" rack mounting profiles and house Excel splitter modules. Their decreased depth of 120mm allows the units to be installed into Environ Enclosures or the Environ 19" Communications Rack.

Part No	Description
208-028	Enbeam LGX 1U 3 Module Panel
208-029	Enbeam LGX 3U 14 Module Panel
208-912	Enbeam 1 X 8 SC APC LGX PLC Splitter
208-913	Enbeam 1 X 16 SC APC LGX PLC Splitter



208-028



208-029



208-912



208-913

### "Tray-Style" Panels

The Excel Enbeam 32-way SC APC Splitter Panels are sliding drawer "tray-style" housings suitable to be installed into 1U of rack space. Outgoing SC APC adaptors are presented from right to left and numbered from 1 to 32 with the incoming port to the right of the panel. The PLC Splitter is then housed inside the panel in an ABS housing to protect it against accidental damage.

Part No	Description
208-918	Enbeam 1 X 32 SC APC Splitter Panel



208-918

### Open Ended and Boxed PLC Splitters

The Enbeam PLC (Planar Lightwave Circuit) Splitter is fabricated using silica optical waveguide technology. Its compact size, high reliability, wide operating wavelength and good channel-to-channel uniformity is widely used in PON applications. Excel provides whole series of 1xN splitter products that are tailored for specific applications. All products meet GR-1209-CORE and GR-1221-CORE requirements.

Part No	Description	
208-901	Enbeam 1 X 4 Open Ended PLC Splitter	Excel's Open-Ended PLC Splitters are not connectorized at either end and can be terminated on application.
208-902	Enbeam 1 X 8 Open Ended PLC Splitter	
208-903	Enbeam 1 X 16 Open Ended PLC Splitter	
208-904	Enbeam 1 X 32 Open Ended PLC Splitter	
208-906	Enbeam 1 X 4 SC APC Boxed PLC Splitter	Excel's Boxed PLC Splitters are fully connectorized and housed, as a plug-and-play solution.
208-907	Enbeam 1 X 8 SC APC Boxed PLC Splitter	
208-908	Enbeam 1 X 16 SC APC Boxed PLC Splitter	
208-909	Enbeam 1 X 32 SC APC Boxed PLC Splitter	



208-902



208-906



## Outlets

### FTTH Outlet Box

The Excel Enbeam FTTH Outlet Box has been designed for applications such as FTTH or FTTD. This wall outlet can also be fitted with a DIN rail mounting plate for installations requiring DIN rail mounting capability.

The Excel Enbeam FTTH Outlet Box can be supplied as a pre-terminated unit, fitted with a 4-core 250-micron B2ca, S1a, d0, a1 drop cable that is 30/50/70 meters in length. The outlet is terminated at one end with four SC APC connectors and left open at the other, allowing for quick installation on application.

Part No	Description
200-447	Enbeam FTTH Outlet Loaded 2xSC/APC Simplex Adaptors
200-449	Enbeam FTTH Outlet Loaded 4xSC/APC Simplex Adaptors
200-449-30	Enbeam FTTH 4 port SC Outlet with 30-meter drop cable
200-449-50	Enbeam FTTH 4 port SC Outlet with 50-meter drop cable
200-449-70	Enbeam FTTH 4 port SC Outlet with 70-meter drop cable
200-442	Enbeam DIN Rail Mounting Bracket

200-449



200-442



### Faceplates and Modules

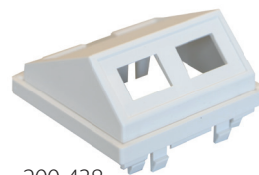
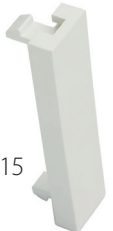
The Excel angled fibre modules have been designed in a way that they can be fitted into standard Excel faceplates with a 45mm or 50mm aperture. This is achieved by the fitting or removal of the outer collar of the module, as well as copper RJ45.

Part No	Description
200-438	Enbeam Unloaded SC Simplex/LC Duplex Angled module
200-439	Enbeam Unloaded SC Duplex/ LC Quad Angled module
100-712	White Single Gang Bevelled Plate without Blanks
100-714	White Single Gang Flat Plate without Blanks
100-716	White Double Gang Bevelled Plate without Blanks
100-718	White Double Gang Flat Plate without Blanks
100-719	White Full Width (25mm) Blank Plate
100-715	White Half Width (12.5mm) Blank Plate
100-175	White Shutter to suit Keystone Jack, Angled, 50 x 25mm
100-020	White Shutter to suit Keystone Jack, Category 6 <sub>A</sub> , Angled, 50 x 25mm
100-014	White Shutter to suit Keystone Jack, 50 x 25mm
100-018	White Shutter to suit Keystone Jack, 6c, 38.5 x 25mm
100-022	White Shutter to suit Keystone Jack, Angled, 6c

100-712



100-715



200-438



100-175



100-018

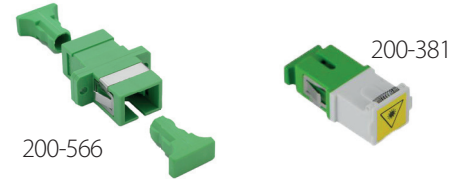


100-020

## Enbeam Fibre Adaptors

Excel Enbeam fibre optic adaptors have been designed to present a range of optic fibre connectors. The adaptors are constructed to allow fitting in the bulkheads with screws. The housings are manufactured from a range of plastics and metals selected to provide the optimum performance.

Part No	Description
200-566	Excel Enbeam Fibre SC/APC Simplex Adaptor
200-381	Excel Enbeam Fibre SC Simplex Flangeless Shuttered Adaptor



## Enbeam Fibre Pigtails

The Enbeam range of pigtails are constructed from high quality connectors and 9/125µm OS1 & OS2 grade cables. Each cable has a short strain relief boot and is supplied with a test report detailing insertion loss.

Part No	Description
200-562	Enbeam Pigtails 9/125µm SC/APC OS2 - 2 meters



## Enbeam Simplex Fibre Patch Cords

The Enbeam range of patch cords are constructed from high quality connectors and 9/125µm OS2 grade cable. Each cable has a short strain relief boot and is supplied with a test report detailing insertion loss. All the patch cords come with an LSOH yellow sheath and are individually bagged and labelled.

Part No	Description
201-211	Enbeam Simplex Patch Cords 9/125µm SC/APC- SC/APC OS2 – 1m
201-212	Enbeam Simplex Patch Cords 9/125µm SC/APC- SC/APC OS2 – 2m
201-213	Enbeam Simplex Patch Cords 9/125µm SC/APC- SC/APC OS2 – 3 meters
201-214	Enbeam Simplex Patch Cords 9/125µm SC/APC- SC/APC OS2 – 5 meters

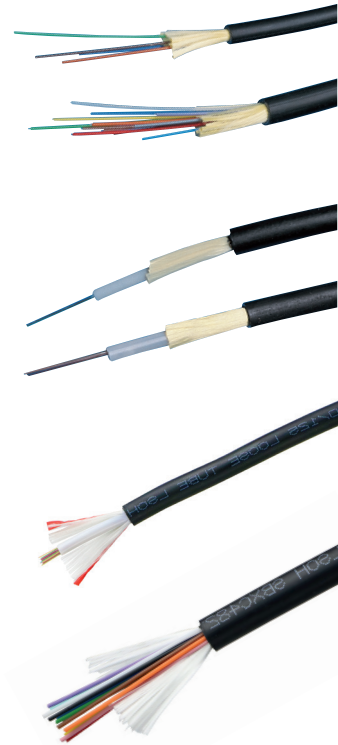


## Enbeam Fibre Cabling

### Standard Cabling

The Excel range of internal/external grade of fibre cables are available from stock in a choice of loose tube and tight buffered designs. Excel has worked extensively to provide singlemode fibre cables performing to the OS2 Category in all constructions. OS2 optical fibres fully support all OS1 & OS2 applications and are fully compatible.

Part No	Description	
205-331	Enbeam Internal 250µm 4 Core Fibre Optic Drop Cable	
205-3XX	Enbeam Internal/External Grade Fibre Cable	
# Cores	Loose Tube Fibre Cable	Tight Buffered Fibre Cable
4 Core	205-300 (Dca, s2, d0, a1)	205-320 (Cca, s1a, d0, a1)
6 Core	-	205-230 (Cca, s1a, d0, a1)
8 Core	205-301 (Dca, s2, d0, a1)	205-322 (Cca, s1a, d0, a1)
12 Core	205-302 (Dca, s2, d0, a1)	205-324 (Cca, s1a, d0, a1)
16 Core	205-303 (Dca, s2, d0, a1)	205-326 (Cca, s1a, d0, a1)
24 Core	205-304 (Dca, s2, d0, a1)	205-328 (Cca, s1a, d0, a1)
# Cores	Enbeam Internal/External Grade CST Loose Tube Fibre Cable	Enbeam Internal/External Grade Tight SWA Buffered Fibre Cable
4 Core	205-305 (Eca)	205-356 (Eca)
8 Core	205-306 (Eca)	205-368 (Eca)
12 Core	205-307 (Eca)	205-360 (Eca)
16 Core	205-308 (Eca)	205-370 (Eca)
24 Core	205-309 (Eca)	205-362 (Eca)



For further information about Excel's compliance with the CPR and BS6701:A1, please visit our website at [www.excel-networking.com/understanding-cpr](http://www.excel-networking.com/understanding-cpr)

### Blown Fibre Cabling

The Excel PON Solution can be installed using Blown Fibre Cabling. The flexibility offered by blown fibre solutions can substantially minimise today's network build costs. With the many uncertainties in the market, such as future trends in technology, demand from customers, people movement and financial confidence, blown fibre can provide a flexible, low total life cost and 'peace of mind' solution. Further information about our Blown Fibre solution can be found in the A5 Product Catalogue.



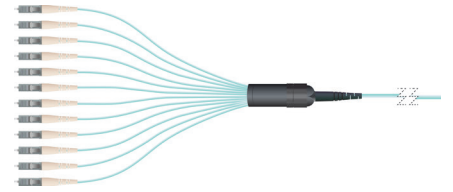
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## Pre-Terminated Cabling

Our Specialist Support Services include a full range of **Pre-Terminated Fibre Assemblies**, which can be used in collaboration with our PON Solution.

The Excel EXCELERATOR is a range of pre-terminated fibre systems including Distribution, Break-Out and Mini Break-Out cables and MTP. The EXCELERATOR brand summarises both the speed in which fibre products can be installed and the product performance they deliver.

To help you quickly and simply design the cable that you want please use the EXCELERATOR Configurator and you can build your cable, produce a drawing of the design and request a quotation within minutes.



## Why Choose Our Pre-Terminated Services?



### Reduce Installation Cost

By getting the most out of cable length and reducing on-site installation time, the overall cost of a project using pre-terminated fibre assemblies can be considerably reduced.



### Reduce Installation Time by up to 75%

With the termination of the fibre cabling all done before delivery, you receive a “plug and play” system; completing an installation takes no time at all.



### Fully Tested, Fully Traceable - 100% Inspected

Excel's pre-terminated fibre solutions are carried out by our specialised, knowledgeable technical staff and go through a rigorous quality check before delivery, to make sure that you receive a fully tested, fully traceable product for peace of mind.



### Maximise Cable Usage - Minimise Waste

Our technical team are experienced in terminating fibre components, and make the most of every inch of cable provided. This not only reduces overall cost but also makes our pre-terminated solutions an environmentally friendly option.



### Fast Turnaround

With a full team of technical specialists, we are able to accept your order and deliver the pre-terminated solution quickly, preventing any delay to your project.



### Covered by the 25-Year Excel System Warranty

When installed by an accredited Excel partner, our pre-terminated fibre assemblies are covered by the 25-year warranty as part of our complete, trusted solution.

For further details and prices on Excel's Specialist Support Services for Pre-Terminated Assemblies contact us on **0121 326 7557** or email **sales@excel-networking.com**.



## Copper Patch Panels

The Excel PON Solution is supported by the existing comprehensive range of Excel products, including copper cabling, patch leads and patch panels, as well as the portfolio of Environ Racks.

### Patch Panels

Excel 24 Port Unloaded Keystone Patch Panel Frame - Black	Excel 24 Port Unloaded Keystone Patch Panel Frame - Chrome	Excel 24 Port Unloaded Keystone Angled Patch Panel Frame - Black	Excel 24 Port Unloaded Keystone Angled Patch Panel Frame - Chrome	Excel 24-port Keystone Patch Panel Frame, 0.5U
-----------------------------------------------------------	------------------------------------------------------------	------------------------------------------------------------------	-------------------------------------------------------------------	------------------------------------------------

P/N 100-026	P/N 100-028	P/N 100-023	P/N 100-024	P/N 100-041
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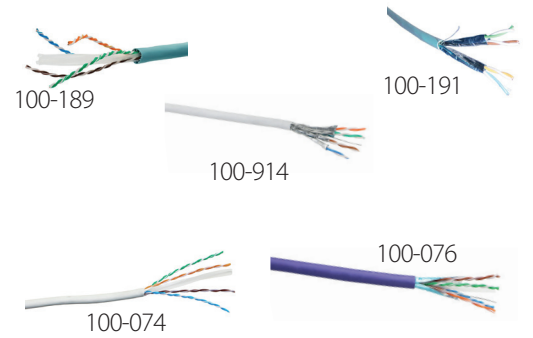


### Modules

Excel Angled Butterfly Keystone Jack - Toolless P/N 100-185 Chrome - Screened - Category 6 <sub>A</sub> P/N 100-213 Black - Unscreened - Category 6				✓ ✓	✓ ✓		
Excel Butterfly Keystone Jack - Toolless P/N 100-181 Chrome Low Profile Screened - Category 6 <sub>A</sub> P/N 100-182-BK Black Low Profile Unscreened - Category 6 <sub>A</sub> P/N 100-180 Screened Keystone Jack, Toolless - Category 6 <sub>A</sub> P/N 100-210 Chrome - Screened - Category 6		✓ ✓ ✓ ✓	✓ ✓ ✓ ✓			✓ ✓	
Excel Unscreened Keystone Jack IDC P/N 100-156-BK Black - Unscreened - Category 6 <sub>A</sub> P/N 100-011-BK Black - Unscreened - Category 6		✓ ✓	✓ ✓				✓

### Excel Category 6<sub>A</sub> Cable

Category 6 <sub>A</sub> U/UTP LSOH Ice Blue 500m	100-189
Category 6 <sub>A</sub> U/FTP "S" Foil Cable LSOH, 500m, Ice Blue	100-191
Category 6 <sub>A</sub> F/FTP "S" Foil Cable LSOH, 500m, Ice Blue	100-196
Excel Category 6 <sub>A</sub> S/FTP Screened Cable - White	100-914



### Excel Category 6 Cable

Category 6 LSOH Cable White	100-074
Category 6 LSOH Cable Violet	100-071
Category 6 LSOH Cable Violet - 305m	100-076

### Cat 6<sub>A</sub> F/FTP Copper Patch Leads

Length (M)	Grey	Blue	Red	Yellow	Green
0.5	100-176	100-220	100-221	100-222	100-223
1	100-148	100-159	100-161	100-166	100-173
2	100-152	100-157	100-162	100-167	100-171
3	100-153	100-158	100-163	100-168	100-172
5	100-154	100-160	100-165	100-170	100-174

### Cat 6 U/UTP Copper Patch Leads

1	100-310	100-315	100-325	100-350	100-416
2	100-311	100-316	100-326	100-360	100-417
3	100-312	100-317	100-327	100-371	100-418
5	100-314	100-319	100-329	100-373	100-419

View the A5 Product Catalogue to see the complete range of colours and lengths available

## Environ Racks

		Key Features				
		U Size	Available Widths	Available Depths	Number of Compartments	Load Capacity
 <p><b>Comms Rack</b></p>		15U 20U 24U 29U 33U 42U 47U	600 mm 800 mm	600 mm 800 mm 1000 mm	1	600 kg
 <p><b>Equipment Rack</b></p>		29U 42U 47U	600 mm 800 mm	600 mm 800 mm 1000 mm	1	600 kg
 <p><b>Co-Lo Rack</b></p>		42U 47U	800 mm	1000 mm	2 or 4	600kg
 <p><b>Server Rack</b></p>		29U 42U 47U	600 mm 800 mm	1000 mm 1200 mm	1	1300 kg
 <p><b>Open Rack</b></p>		42U 48U 52U	600 mm	75 mm 400 mm	1	1500 kg
 <p><b>Wall Rack</b></p>		6U 9U 12U 15U 18U 21U	600 mm	390 mm 500 mm 600 mm	1	63 kg - 390 60 kg - 500 60 kg - 600

## Acronyms and Abbreviations:

AAA	authentication, authorization and accounting	LAN	local area network
AC	access control	LLDP	link layer discovery protocol
AP	access point	MSTP	multiple spanning tree protocol
BNG	broadband network gateway	NGPON	next generation PON
CAPWAP	control and provisioning of wireless access points	OLT	optical line terminal
DBA	dynamic bandwidth assignment	ODN	optical distribution network
EAP	extensible authentication protocol	ONT	optical network terminal
ECMP	equal and weighted cost multi-path	ONU	optical network unit
EOTDR	embedded optical time domain reflectometer	OSS	operations support system
FTTB	fibre to the building	OTDR	optical time domain reflectometer
FTTD	fibre to the desk	PBX	private branch exchange
FTTF	fibre to the frontage	PoE	power over ethernet
FTTH	fibre to the home	POL	passive optical LAN
FTTK	fibre to the kerb	PON	passive optical network
FTTO	fibre to the office	SNMP	simple network management protocol
FTTP	fibre to the premises	SSL	secure sockets layer
FTTR	fibre to the router	USG	unified security gateway
FTTX	fibre to the X	VoD	video on demand
GPON	gigabit-capable passive optical network	VoIP	voice over internet protocol
HSI	high-speed internet	VPN	virtual private network
IoT	internet of things	VRRP	virtual router redundancy protocol
ISSU	in-service software upgrade	WAN	wide area network
LACP	link aggregation control protocol	WDM	wavelength division multiplexing
LAG	link aggregation group	WLAN	wireless local area network



View our range of videos, including an overview of the Excel PON Solution, on our YouTube Channel

[www.youtube.com/ExcelNetworking](http://www.youtube.com/ExcelNetworking)

excel without compromise. 



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