Microducting Network Solutions

FTTx SYSTEMS

MiniGlide® & MicroGlide® Optical Fibre Tubing Systems
FTTx Systems

System Overview

The smart choice for smart networks

A thirst for Ultra Broadband...
The evolution of broadband markets and associated services & applications such as triple play, HDTV, video on demand, VoIP etc. are all factors driving the ever increasing demand for very high speed (VHS) internet to the end user.

Driving FTTX fibre deployment
In their bid to meet future needs, operators & service providers are deploying fibre based infrastructures, focusing on metropolitan and access networks providing VHS to the residential and business sectors.

Helping you achieve tomorrow’s networks

Future Proof
Flexible
Cost Effective

The smart fibre pathway
MiniGlide® and MicroGlide® solutions are microtubing systems developed especially to meet the requirements of FTTX networks. Designed for scalable and economic installation, the systems enable rapid and simple fibre deployment from trunk networks through to the end user.

The modular tubing infrastructure is based on individual small diameter tubes supplied loose or bundled in cable-like assemblies for use in new or existing networks.

The flexible systems allow for future expansion without the initial fibre outlay as each tube is populated when required by blowing in fibre mini-cable or blown fibre units, leaving empty tubes to satisfy further demand.

System Applications

VHS = Very High Speed  FTTX = Fibre to the X
FTTN = Fiber to the Node  FTTH = Fiber to the Home
SHs = Single Homes  MDUs = Multiple Dwelling Units
MiniGlide® & MicroGlide® systems

**MiniGlide®**
The ideal solution for metropolitan, distribution and campus networks. Designed for use with mini-cable (up to 96 fibre), it offers high fibre capacity and allows fibre to be blown in as and when required, providing vast expansion scalability with minimal initial investment.

MiniGlide® is the perfect complement to MicroGlide® in access networks. It is typically installed from the distribution node to the intermediate splice, whereas MicroGlide® is normally used for the final section to the end user.

**MicroGlide®**
Designed for use with blown fibre units (up to 12 core). It is the perfect solution for connecting a number of smaller buildings such as small and medium sized businesses, campuses and residential areas or where initial fibre penetration is low.

**Whether you are deploying a FTTN or FTTH network, we have the solution to your needs**

**An Experienced Partner**
With many years experience in supporting large and small scale deployments, we offer “built to last” proven systems with paramount quality and performance, protecting your investment in the long term.

**Enhanced Technical Support**
We pride ourselves in providing tailored solutions to our customers if our standard range does not cover your requirement. Our development engineers will be pleased to devise special application products.

**Systems Benefits**

- Deferred capital cost
- No need to guess future fibre requirements
- Maximised network capacity
- Rapid installation and short response time
- Flexible network expansion, connection and upgrade
- Fast & easy branching-off
- Point to point fibre connections
- Limited splicing
- Reduced engineering costs
- Mid-span access at any location, at any time
- No disruption to live fibre
FTTx Systems

Systems Components

MiniGlide®

For use with mini-cable up to 96 Fibres.
Network applications: backbone, trunk, metropolitan, distribution, access, last mile

Individual Tubes
- Permanent low friction inner coating for enhanced blowing performance
- Smooth or ribbed inner wall
- Supplied in a range of colours - opaque, translucent and stripes
- Supplied as singles tubes or assemblies

<table>
<thead>
<tr>
<th>Tube OD</th>
<th>Tube ID</th>
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<tbody>
<tr>
<td>7mm</td>
<td>5.5mm</td>
</tr>
<tr>
<td>8mm</td>
<td>6mm</td>
</tr>
<tr>
<td>10mm</td>
<td>8mm</td>
</tr>
<tr>
<td>12mm</td>
<td>10mm</td>
</tr>
<tr>
<td>14mm</td>
<td>11mm</td>
</tr>
</tbody>
</table>

Other ODs/IDs available on request

Tubes Assemblies
- Sheathed Bundles: 1, 2, 4, 7 way - as standard
- Applications: Outdoor - New and existing networks
   Indoor - Low Smoke Zero Halogen (LSZH)
- Sheathing Options: Direct Bury
   Direct Install
   Metallic & Non Metallic
   Low Smoke Zero Halogen
- Special Applications
  Aerial
  Anti-roddent
  Anti-termite
  Armoured
  Chemical Resistant

We can also supply factory installed loose tubes into duct. Tube OD and count vary as per customer requirement.
MicroGlide®

For use with blown fibre units up to 12 Fibres. Network applications: FTTx - Access networks to end user, residential (MDUs and SHs) and business parks.

Individual Tubes
- Permanent low friction inner coating for enhanced blowing performance
- Smooth inner wall
- Supplied in a range of translucent colours
- Supplied as singles tubes or assemblies

<table>
<thead>
<tr>
<th>Tube OD</th>
<th>Tube ID</th>
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<tbody>
<tr>
<td>3mm</td>
<td>2.1mm</td>
</tr>
<tr>
<td>5mm</td>
<td>3.5mm</td>
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</tbody>
</table>

Other ODs/IDs available on request

Tubes Assemblies
- Available in: 1, 2, 4, 7, 12, 19 and 24 way
- Applications: Outdoor - New and existing networks
                 Indoor - Low Smoke Zero Halogen (LSZH)
- Sheathing Options: Direct Bury
                     Direct Install
                     Metallic & Non Metallic
                     Low Smoke Zero Halogen
- Special Applications: Aerial
                       Anti-rodent
                       Anti-termite
                       Armoured
                       Chemical Resistant
Connectivity

Point to Point connections are easily achieved by extending or branching off the network of tubes by cutting and connecting them with “push-fit” fittings and placing them into protective joint boxes. Fibre can then be blown in, as and when required, through to the end user without interruption/splicing.

Matrix® Joints
- Can be installed in an access chamber or buried directly into the ground
- Fully retrofittable and reusable
- Easy to install, no tools required

<table>
<thead>
<tr>
<th>Port Dimensions</th>
<th>50-50 mm</th>
<th>40-40 mm</th>
<th>32-32 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Line Joint*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-Branch Joint*</td>
<td>50-50-50 mm</td>
<td>40-40-40 mm</td>
<td>32-32-32 mm</td>
</tr>
<tr>
<td></td>
<td>50-50-40 mm</td>
<td>40-40-32 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-50-32 mm</td>
<td>40-40-25 mm</td>
<td></td>
</tr>
<tr>
<td>H-Branch Joint</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Inserts available to fit various cable ODs.

Push-Fit Fittings
Complete range available for tube connection, sealing, repair and entry into buildings.
- Straight connectors, reducers and end stops
- Water and gas blocking connectors

Tools
Specialised range to assist in the installation of the microtubes network including cutters for duct and microtubes, circumferential and longitudinal sheath strippers.

Outside Plant Hardware
We offer a range of home termination kits and splice boxes.
Access Chambers

A range of modular, light weight and compact HDPE moulded chambers which offer simple installation in minimal time. Ideal for splice points, pulling or blowing points and break & branch customer connections.

Radbox® Chambers

A fully modular system comprising wall panels and corner pieces which fit together to provide a wide range of chamber sizes.
- EN124 Class B125
- Compact, lightweight, one stop installation

<table>
<thead>
<tr>
<th>Single Panels Width (mm)</th>
<th>Width &amp; Length</th>
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<tbody>
<tr>
<td>450</td>
<td>Any combination of standard wall panels up to 2.25m.</td>
</tr>
<tr>
<td>600</td>
<td>Any combination of 500mm and 150mm high panels up to 1.5m.</td>
</tr>
<tr>
<td>725</td>
<td>Depth</td>
</tr>
<tr>
<td>900</td>
<td></td>
</tr>
<tr>
<td>1050</td>
<td></td>
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</tbody>
</table>

Quadbox® Chambers

A robust system of stackable segments allowing variable depth.
- Class B125 (Q1310 is Class B250)
- Easy fit “click in” steps and cable bearers

<table>
<thead>
<tr>
<th>Item</th>
<th>Width (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Q600</td>
<td>600</td>
<td>450</td>
</tr>
<tr>
<td>Q725</td>
<td>725</td>
<td>255</td>
</tr>
<tr>
<td>Q915</td>
<td>915</td>
<td>445</td>
</tr>
<tr>
<td>Q1310</td>
<td>1310</td>
<td>610</td>
</tr>
<tr>
<td>Depth: any combination of 150mm panels</td>
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</tbody>
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Frames & Covers

We offer a full range of concrete and ductile iron frames and covers to complement the Radbox® and Quadbox® chambers.
In addition to system components, we offer a range of technical services through our team of specialised engineers.

- Design assistance
- Field and classroom training
- Coaching and supervision
- Small scale fibre installation