

AROONA-P2P

Duplex Spatial Multiplexer/Demultiplexer for Multi-Mode Optical Fiber Links

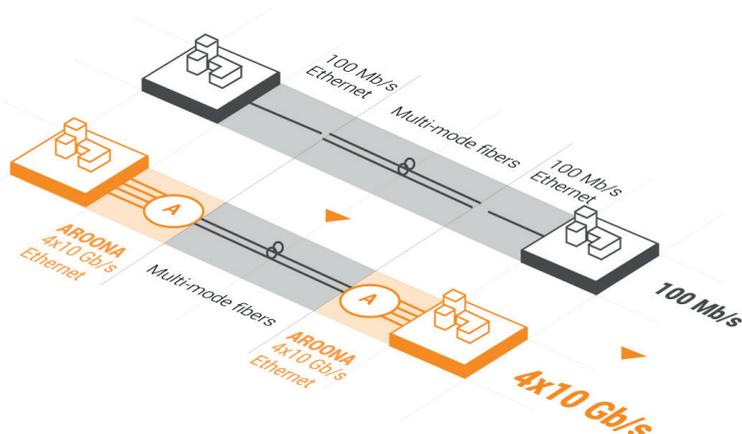
- Transforms one multi-mode fiber link into **4 independent high-capacity channels without any additional fiber deployment**
- Increases the reach of conventional multi-mode fiber links up to **10 km at 4x10 Gb/s**

CAILabs' **AROONA-P2P** offers a **flexible and low-cost** solution to expand the capacity of existing multi-mode fiber links in Local Area Networks.

Using mode-group multiplexing over 4 optical channels, CAILabs' unique **Multi-Plane Light Conversion*** technology transforms a single conventional multi-mode fiber link into 4 independent channels, **equivalent to 4 single-mode fiber links**.

By overcoming modal dispersion, reach for high transmission rates is **increased by as much as 10 km**. This enables duplex transmission of **4x10 Gb/s** in only one pair of standard multi-mode fibers (OM) at a single wavelength.

AROONA-P2P is a **passive device and transparent to communication protocol**. It operates with **commercial single-mode transceivers** at 1550 nm and achieves high transmission rates without additional optical fiber deployment. It offers a capacity increase **without a hassle and for a low cost**.



Typical use case

Let us consider a 300m link at 100 Mb/s over dual OM2 fibers between two buildings on a campus. Increasing data rate to 1 Gb/s can be achieved by upgrading active components such as switches and transceivers. However, an upgrade to 10 Gb/s is limited by the bandwidth of the OM2 fibers.

Increasing the data rate to 10 Gb/s typically requires the deployment of new fibers.

CAILabs' **AROONA-P2P** solution increases the capacity of the link to **4x10 Gb/s** without long, complex and expensive fiber deployment. **AROONA-P2P** is also compatible with WDM technologies, providing **easy and seamless high-capacity scaling of the network** while ensuring **LAN infrastructure durability**.

* U.S. Pat No 9.250.454 - Japanese patent n° 5990544

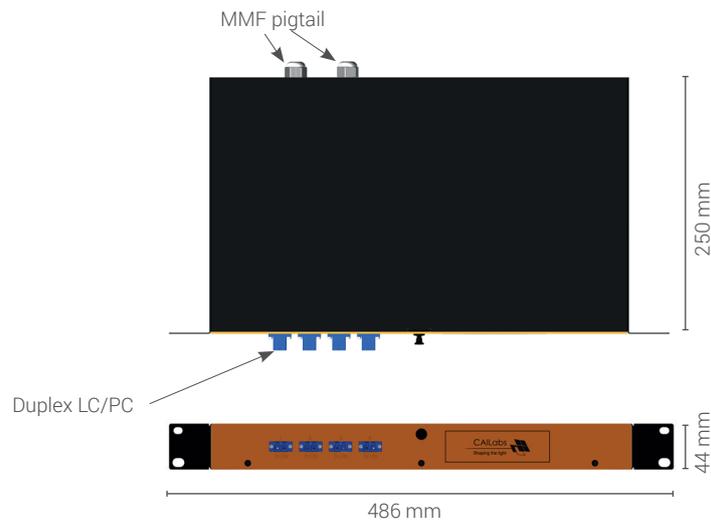
Technical specifications

| PARAMETER | AROONA-P2P-800 | AROONA-P2P-2000+ |
|----------------------------|--|------------------|
| Operating wavelength | C-band (around 1550 nm) | |
| Reach | < 800 m | Up to 10 km |
| Number of channels* | 4* | |
| System capacity | 10 Mb/s to 50 Gb/s per channel Independent data rate over each channel | |
| Multiplexer insertion loss | < 4 dB (typical: 2.5 dB) | |
| Channel isolation | > 15 dB | |
| Communication protocol | Transparent to standard protocols (Ethernet, Fiber Channel, SDH, etc.) | |
| Compatible transceivers | Any type of single-mode transceiver (Rx PIN) Format: SFP, SFP+, XFP, GBIC, XENPACK, X2 Recommended specifications: 1000BASE-EX, 10GBASE-ER | |

* subject to complexity of the link

Physical characteristics

| PARAMETER | VALUE |
|--|--|
| Fiber type | 62.5/125 μ m (OM1) ou 50/125 μ m (OM2 / OM3 / OM4) |
| Multiplexer input / Demultiplexer output | Duplex LC/PC connector |
| Multiplexer output / Demultiplexer input | MMF pigtail |
| Operating temperature | +5°C to +40°C (EN 300 019-2-3) |
| Housing size | H: 44 mm x L: 486 mm x P: 250 mm Rack 19" 1U |



All specifications are correct at the time of production of this specification sheet. Any design or specification can be changed without prior notice.