

# OpenLAN Local MAC Bridge

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ND 110580



## **Introduction**

The OpenLAN Local MAC Bridge (OL-LMB) connects two local 10 Mbps Cheapernet (CSMA/CD IEEE 802.3) or Ethernet networks together while filtering unnecessary traffic away from each network. It has been designed with a "plug in and go" philosophy with no user configuration or control necessary.

This is possible because the OL-LMB dynamically learns the source addresses on either side of the bridge and then only forwards a packet across to the other side if the destination is not on the originating network. When used in conjunction with the relevant transceivers, the OpenLAN Local MAC Bridge allows connection between Cheapernet segments, thick Ethernet segments, fibre-optic segments, or between any combination of the three.

## **Features**

- Unique design offers high throughput with extremely low transfer delays
- Unnecessary packets filtered out so that network loading is reduced
- No configuration or user setup needed
- Extends total network diameter to 20 km
- Offers point-to-point LAN links up to 4 km using fibre-optic cable

## **Product description**

### **Traffic Partitioning**

The OpenLAN Local MAC Bridge is particularly relevant for shared networked disk applications such as CAD/CAM installations, network filing systems, workstation networks, PC networks and clusters where the bandwidth of single servers begins to load the network to 20% and above. The traffic partitioning function of the Local MAC Bridge gives extended 802.3 networks an effective total bandwidth greater than 10 Mbps. This is done by dividing off high-bandwidth user groups so that the benefits of a single-site LAN can be retained and the network as a whole remains responsive.

### **Extending Network**

Unlike a repeater, the OL-LMB does not propagate collisions across from one network to another and so allows the LAN diameter to be extended beyond the 3 km and 4 repeater limits (ISO Ethernet standard). Long "inter-repeater" type links are also possible using fibre optics media. Distances up to 2 km between LANs can be implemented with a single bridge, when combined with fibre optic cabling, transceivers and a single repeater. Distances of up to 4 km can be achieved by using a bridge at each end of the fibre optic cable.

### **Protocol-Independent**

The OpenLAN Local MAC Bridge operates at the data link layer of the OSI seven layer model and so it can work with industry-standard or proprietary protocols, for example OSI, TCP/IP, XNS and DECnet.

### **Data Integrity**

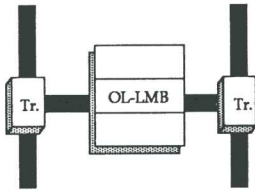
The packet checksum is preserved and not regenerated to ensure that end-to-end data integrity is maintained.

### **Self-Test**

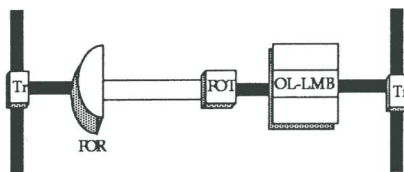
The OL-LMB undergoes a comprehensive self-test at power-on.

## Ease of Installation

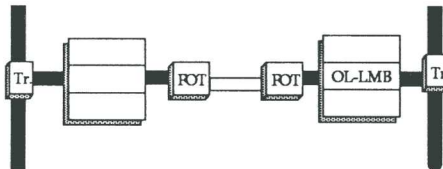
It is as easy to install as a repeater, with useful indicators provided for power, operational status and packet activity/packet forward for each port.



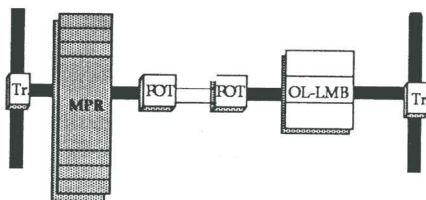
- OL-LMB used as a link between two thick Ethernet segments. Components: 2 Ethernet Transceivers, 2 Transceiver Drop Cables, 1 OL-LMB.



- OL-LMB used together with fibre-optic cabling to extend and isolate 2 Ethernet segments. Maximum distance: 2 km. Components: 2 Ethernet Transceivers, 3 Transceiver Drop cables, 1 OL-LMB, 1 Fibre Optic Repeater, 1 Fibre Optic Transceiver.



- Two OL-LMBs used with fibre-optic cabling to extend and isolate 2 Ethernet segments. Maximum distance: 4 km. Components: 2 Ethernet Transceivers, 4 Transceiver drop cables, 2 OL-LMBs, 2 Fibre Optic Transceivers.



- OL-LMB used together with fibre-optic cabling to extend and isolate 2 Ethernet segments. Maximum distance: 2 km. Components: 2 Ethernet Transceivers, 4 Transceiver Drop Cables, 1 OL-LMB, 1 MultiPort Repeater, 2 Fibre Optic Transceivers.

## Technical specifications

### Performance:

- Filters 17,100 packets/s
- Forwards 13,000 packets/s
- Processing delay of 77  $\mu$ S
- 1,158 address entries in filtering database
- Buffers up to 160 packets a channel
- Data buffer capacity of 0.5 MB total
- Address database entries "aged out" in 15 minutes

### Media Interfaces:

Two standard AUI connectors with slide locks

### Mechanical:

Fully enclosed metal construction, for wall or 19" shelf mounting, or for free-standing use.

### Dimensions:

- unit: 86 mm(h) x 426 mm(w) x 290 mm(d)
- packaged size: 117 mm(h) x 564 mm(w) x 362 mm(d)

### Operating Environment:

- Ambient Temperature: 0° to 40° C
- Humidity: 10% to 95% non-condensing

### Weight:

Net	Gross
6.6 kg	8.3 kg

### Standards:

The Local MAC Bridge is designed to the following standards:

- IEEE 802.3
- VDE 0871 class A
- IEC 950
- ISO DIS 8802/3
- ECMA 97
- FCC 20780

Electrical Power Inlet:

IEC 320

Fuse Protection:

Single pole fuse

Mains Operation:

99-132V a.c. or 198-264V a.c. at 50-60Hz power

Consumption:

100V max.

Norsk Data networking specialists can provide comprehensive system-design advice and installation services for systems builders on application.

## Documentation

OpenLAN Product Family Guide .....	ND-813037
OpenLAN Network Mgmt. & Operation Guide .....	ND-830124
OpenLAN Network Control Server Inst. & Oper. Guide .....	ND-830123
OpenLAN TIU Terminal User Guide .....	ND-860351
OpenLAN Network Supervisor Guide .....	ND-830107
OpenLAN TIU Quick Reference Guide .....	ND-860359
OpenLAN TIU Getting Started Guide .....	ND-860353

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