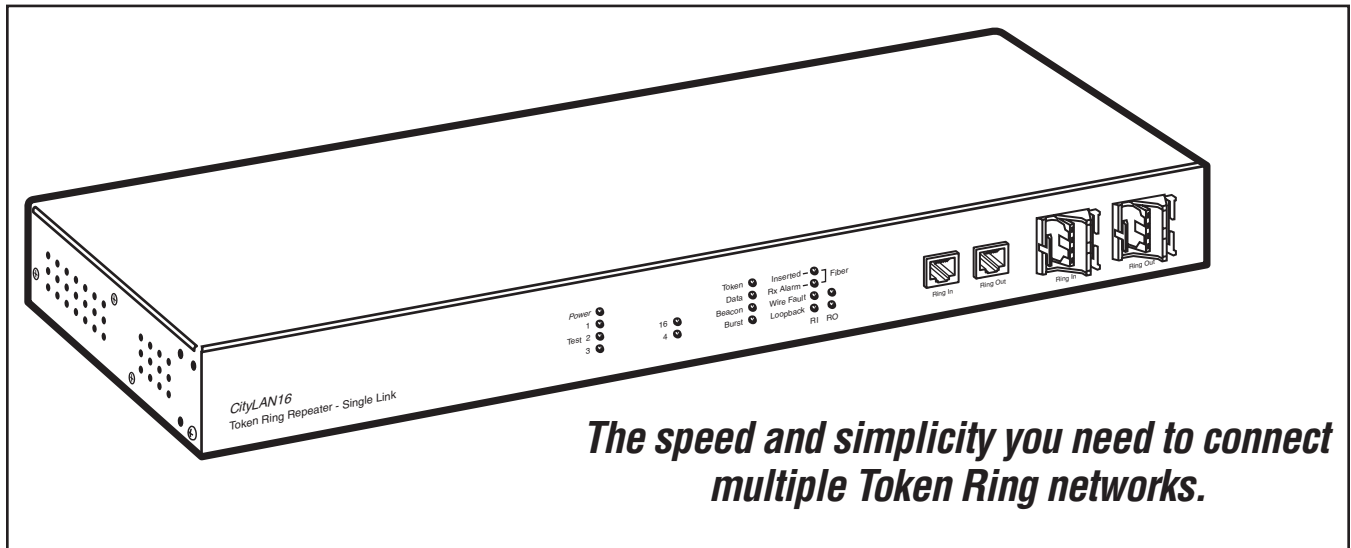


BLACK BOX[®]

NETWORK SERVICES

CityLAN 16 Series Long-Distance Token Ring Repeater



Key Features

- ▶ **Manage with SNMP, V1, Telnet™, SLIP, 802.5 Token Ring, MIB, and ASN.1 Repeater-Specific MIB.**
- ▶ **Extends 4- and 16- Mbps Token Ring networks up to 40 km**
- ▶ **Switch-selectable 4- and 16-Mbps data speeds.**
- ▶ **Automatic loopback and reconfiguration.**
- ▶ **Single- and dual-link models available.**

Keep your original cabling while extending your Token Ring by up to 40 km. These CityLAN repeaters are perfect for building-to-building and multiple-site Token Ring networks.

The CityLAN 16 has automatic fiber loopback, which protects your network with a full backup data path in the event of a fibre-link malfunction. If the fibre link fails, the rings separate into their original configuration. When the fiber link is restored, the unit picks up the Repeater-linked data path as it was before the fibre failure.

A Smart RI/RO feature allows switches, routers, and bridges with Token Ring lobe connectors to be hooked directly to the CityLAN 16. When Smart RI/RO is active, the CityLAN 16 can operate with active MAUs and Token Ring hubs that have similar Smart RI/RO mechanisms.

The CityLAN 16 gets its power from a 100V-240V AC supply that is universal across acceptable input-voltage ranges. The electronics inside the unit are protected with an internal safety fuse.

The CityLAN 16 comes in single- and dual-link models. The single-link model provides for point-to-point connections. With the dual-link model, you can develop a variety of application-specific Token Ring structures.

Both units can be managed with in-band and out-of-band protocols, including SNMP, V1, Telnet™, MIB, and ASN.1 Repeater-Specific MIB.

The repeaters are housed in 1U, 19-inch racks ergonomically designed to optimize your hardware storage space.

You can incorporate any number of repeaters into your

network, but remember that Token Rings are limited to 260 addresses. Also, you must count each repeater in the station count for the entire ring. (Though most Token Rings are actually limited to 72 stations because of phase-jitter distortion, using shielded cable or phase-jitter reduction technology can address this problem.)

Note: These repeaters should be used in pairs.

Specifications

Standards Supported — IEEE 802.5
1989 Token Ring Access Method;
802.5J Fibre Station Attach

Distance — Single-Link: 40 km

Fault Recovery Time — 0.5 second

**Optical Power Budget (using 9/
125-µm fibre cable)** — 19 dB
Low Power; 26 dB High Power

Typical Launch — -11 dBm Low
Power; -4 dBm High Power

Min. Launch — -13 dBm Low
Power; -6 dBm High Power

Min Receive — -32 dBm

Link Lengths —

Optical (9/125-µm fibre): 40 km
, depending on the
power budget;

Electrical:

Type 3 (Category 5 UTP), RJ-45

(24 AWG): 4 Mbps, up to
170 m ; 16 Mbps,
up to 100 m :

Type 1: 4 Mbps, up to 300 m
; 16 Mbps, up to
150 m

Management — SNMP, V1,
Telnet™, SLIP, 802.5 Token Ring,
MIB, ASN.1 Repeater-Specific
MIB

Speed — 4 or 16 Mbps, switch-
selectable

Protocols — IEEE 802.5 Token Ring

Indicators — LEDs: Power, (3) Test,
4-/16-Mbps, Inserted, Rx Alarm,
Loopback, Wire Fault, Token, LLC
Data, Beacon, Burst

Connectors — Both: (1) data
connector, (1) shielded RJ-45,
(1) DB25 (RS-232 management

port); LCL161A: (1) pair ST;
LCL162A: (2) pairs ST

Connector Pinouts —

	IBM MIC	RJ-45
<i>Ring In</i>	(STP)	(UTP)
TxA	Black	3
TxB	Orange	6
RxA	Red	4
RxB	Green	5

<i>Ring Out</i>	(STP)	(UTP)
TxA	Red	4
TxB	Green	5
RxA	Black	3
RxB	Orange	6

Power Supply — 90 to 264V @ 47 to
63 Hz, or 48V DC

Power Consumption — < 15W

Contact Closures — 30V at 0.5A DC
or 250V at 1A AC

Operating Temperature —
0 to 40°C

Storage Temperature —
-10 to +70°C

Humidity — Up to 90%, non-
condensing

Power — 115 to 230 VAC, 50 to
60 Hz, autosensing

Size — 4.4H x 48.3W x 16.5D cm)

Weight — 5.1 kg

Ordering Information

ITEM

CODE

CityLAN 16 Series Long-Distance Token Ring Repeater

Single-Link

115-/230-VACLCL161A-SMST

With Redundant Power Supply.....LCL161A-SMSTR

48-VDCLCL161A-SMST48

Dual-Link

115-/230-VACLCL162A-SMST

With Redundant Power Supply.....LCL162A-SMSTR

48-VDCLCL162A-SMST48