Omnitron Systems Technology, Inc.

OmniRing™ ARC/16

Token Ring Active Retiming Concentrator Hub

FEATURES:

- 30 ports, 14/28 lobe active retiming concentrator.
- Runs 4 Mbps or 16 Mbps Token Ring networks.
- Speed detection and lockout prevent wrong speed nodes from entering and disrupting ring operation, resulting in improved ring reliability.
- Per-port active retiming and repeating allows lobe distances of 1150 feet (350 meters) on 16 Mbps rings, and 1640 feet (500 meters) on 4 Mbps rings.
- Dual Ring-In/Ring-Out sets allow the hub to switch between two separate rings providing added flexibility.
- Both copper RJ45 connectors and fiber ST type connectors are available for Ring-In and Ring-Out facilitating easy mixed media ring configurations.
- Automatic ring healing and dual ring redundancy facilitate fault-tolerant operation and enable continued operation in spite of multiple simultaneous cable failures.
- Lobe extension facilitates connection between OmniRing hubs using a single lobe cable enabling cascading and daisy chaining of hubs.
- Flow meter display of ring activity enables monitoring of data traffic loading.
- Error status indicators display burst and beacon errors enabling early detection of potential ring problems.
- Ring maintenance frame activity indicators assist in installation and in ring management.
- Lobe indicators monitor lobe insertion and errors, and assist in troubleshooting and problem-solving.
- Compliance with IEEE 802.5 Token Ring standard ensures inter-operability with other compliant third-party equipment.

DESCRIPTION:

The OmniRing™ is a 16/32 port, 14/28 lobe active retiming concentrator which provides retiming on all lobes, as well as on Ring In and Ring Out. The OmniRing provides numerous features which provide ring integrity, data integrity, flexibility, monitoring.

Ring Integrity: Through a switch setting, the OmniRing operates at either 4 Mbps or 16 Mbps. Normally, inserting a device operating at one speed into a ring which is operating at a different speed will cause a massive ring failure. The OmniRing speed detection and rejection feature preserves ring integrity by checking the speed of the device attempting insertion and preventing an offending device from entering the ring.

Another ring integrity feature is automatic bypass on both Ring-In and Ring-Out. When a cable is removed or broken, the OmniRing senses it and reconfigures the ring without further operator intervention.

Multiple hub sites can achieve extended ring integrity by taking advantage of the redundant fiber optic and copper Ring-In/Ring-Out connections. With redundant cabling, data is transmitted on both the fiber optic path and copper cables. The receiving hub ignores the copper ports until the fiber optic ports become inactive due to automatic bypass (a fiber optic cable was removed or broken). The copper Ring-In and Ring-Out then take over with no interruption to the ring. Furthermore, the backup path is still available to protect against yet another single point failure.

Data Integrity: Data integrity is the central feature of the OmniRing architecture. Each lobe and Ring-In/Ring-Out port is actively retimed, thus eliminating the majority cause of jitter. The OmniRing architecture features PLL circuitry which resynchronizes the data to the embedded clock. The newly resynchronized data is then actively repeated to ensure that a strong, clean signal is passed on to the next member of the ring.

Active retiming provides the assurance that cable lengths may be significantly increased while maintaining data integrity.

Flexibility: The OmniRing has several features which provide the user with needed flexibility. Through a switch setting, the OmniRing may switch its lobes to operate on an alternate ring. The lobes can be dynamically switched between the primary and alternate ring at any time.

The OmniRing also has the ability to perform lobe extensions by connecting the Ring-Out of a remote hub to a standard lobe on another hub. This configuration may also be used for group clustering from remote wiring closets.

Added flexibility is provided by allowing the user to select different OmniRing features and modes as necessary to connect to less-featured or passive equipment.

Monitoring: The OmniRing provides visual monitoring via a front panel flow meter and per-lobe diagnostic LEDs. The flow meter is a spinning bar which indicates the utilization of the ring. The per-lobe LEDs indicate insertion and error status.

The flow meter performs double duty in stackable OmniRing configurations. Rear panel connectors allow the stacked OmniRing hubs to be configured as a single virtual hub. A front panel switch toggles between the flow meter and a hub identification display which allows the user to confirm the identity of the connected hubs.

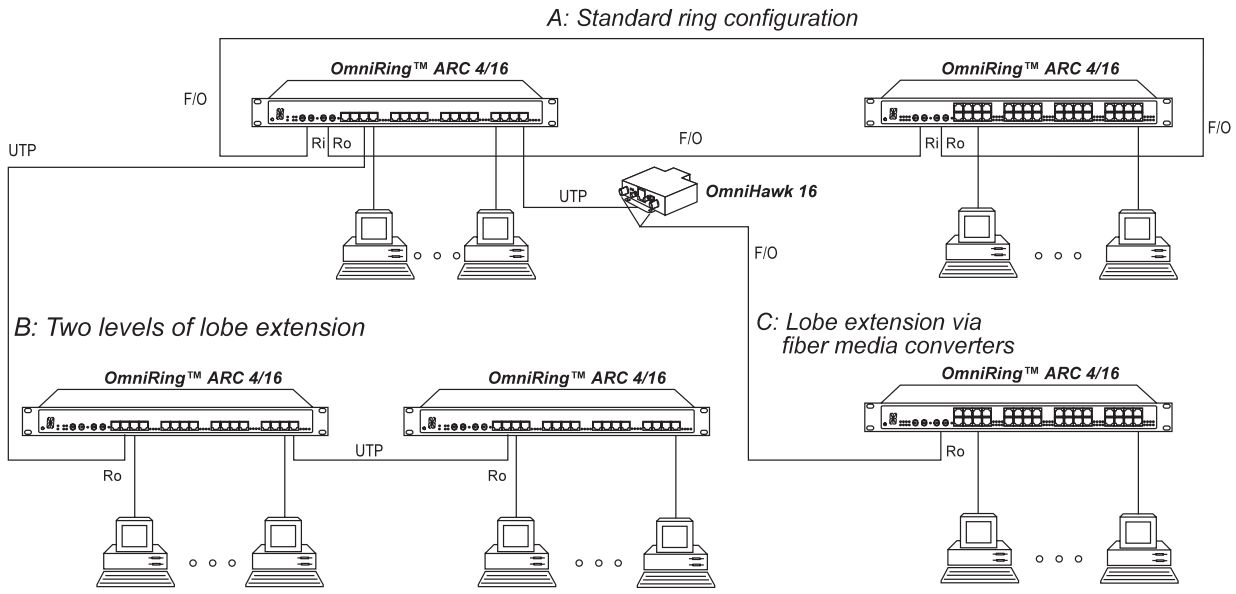
SAMPLE APPLICATIONS:

The following picture show different token ring solutions possible using the OmniRing hubs:

A. Standard two hub Ring-In/Ring-Out configuration forming a normal dual ring.

B. Lobe extension of two cascaded hubs solution where lobe cables are connected to the Ring-Out trunk line of the extension hub.

C. Lobe extension via fiber solution which utilizes the OmniHawk™ as a fiber media converter.



SPECIFICATIONS:

- Ring Speed: 4 Mbps or 16 Mbps
- Interfaces:
  - Ring-In: RJ45 (1 or 2), Fiber (1)
  - Ring-Out: RJ45 (1 or 2), Fiber (1)
  - Lobes: RJ45 (14 or 28)
- Distances:
  - Category 3 @ 4 Mbps: 350 m, 1150 ft.
  - @ 16 Mbps: 175 m, 575 ft.
  - Category 5 @ 4 Mbps: 500 m, 1640 ft.
  - @ 16 Mbps: 350 m, 1150 ft.
  - Fiber Optic @ MM: 2.5 km, 8200 ft.
  - Fiber Optic @ SM: 40 km, 24.8 mi.
- Ring Indicators:
  - Ring Speed Indication: Green (2)
  - Active Ring Indication: Green (2)
- Error Indicators:
  - Beacon Error: Red (1)
  - Burst Error: Red (1)
- Activity Indicators:
  - MAC Frame detection: Green (1)
  - Token Frame detection: Green (1)
- Lobe Indicators:
  - Lobe Insert / active: Green (1)
  - Lobe Insert / error: Red (1)
- Dimensions:
  - Stackable: W:17.5”xD:11.0”xH:1.75”
  - Rackmounted: W:19.0”xD:11.0”xH:1.75”
- Weight: 8 lb.
- Power: 90 to 240 VAC, 50 to 60 Hz, 250 mA
- Temperature:
  - Operating: 0 to 45 degrees C
  - Storage: 0 to 85 degrees C
- Humidity: Up to 90% (non-condensing)

ORDERING INFORMATION:

Model	Description
3100	OmniRing ARC/16, 16 UTP
3116	OmniRing ARC/16, 16 UTP + 2 F/O
3200	OmniRing ARC/16, 32 UTP
3216	OmniRing ARC/16, 32 UTP + 2 F/O

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