Omnitron Systems Technology, Inc.

OmniStar™ 400

AS400/3X 5250 and 5250 Express Star/Repeater

FEATURES

- Twinax 5250 and 5250 Express compatible star repeaters that convert twinax daisy-chained cables to a star twisted pair configuration.
- Seamlessly connects to standard 5250 and 5250 Express IBM AS/400 and 3X local and remote twinax controllers and workstations.
- Supports distances of 5,000 feet on twinax and 3,000 feet on each twisted pair cable for a total distance of 8,000 feet per connection.
- Cascadable to four units for extra long distances.
- Retiming repeater technology regenerates and reclocks data, eliminating clock jitter and noise.
- Digital Phase Locked Architecture provides acquisition of data rates of 1 Mbps for 5250 or 2 Mbps for 5250 Express (-2%, +4%), resulting in high immunity to noise and crosstalk.
- Twinax or RJ11/45 connectors and polarity controls provide easy installation and flexibility.
- Clear display and software independence make installation and monitoring intuitive and easy.

DESCRIPTION

The OmniStar™ 400 is an IBM 5250 and 5250 Express compatible star repeater that replaces traditional twinax daisy chains and provides star configuration on twisted pair wiring. It supports distances of 3,000 feet on each twisted pair and 5,000 feet on twinax for a total of 8,000 feet from the host. For cases that require additional distance, the OmniStar supports cascading of up to 4 stars.

The host connects to the OmniStar via twinax or twisted pair RJ11/45 cable. The workstation connects to it via twisted pair RJ11/45 cable. Both the host and workstation ports support polarity configuration, which facilitates the usage of different balun types.

The OmniStar diagnostics detect and display true port activity and parity errors. Each port is monitored for valid frame header patterns which are displayed via green Activity LEDs. The data is analyzed for errors; a detected error is displayed via a red Parity Error LED. These features assist in installation and monitoring of the OmniStar operation.

In contrast to passive and active stars which are susceptible to device data rate variations, noise and crosstalk, the OmniStar's Digital Phase Locking Architecture (PLA) provides data acquisition with data rate variations of -2% to +4% while providing superior noise and crosstalk immunity. Additionally,

in a traditional star, shorted or unterminated cables can cause a port failure. By contrast the PLA isolates the failures so they do not affect operation.

The Express models operate with both the 5250 and 5250 Express protocols. Each port provides data rates of 1 Mbps for standard 5250 and 2 Mbps for 5250 Express protocol.

The OmniStar 400 is completely software-transparent and no setup is required.

OPERATION

Inputs: The OmniStar 400 is built around a Digital Phased Locked Architecture (PLA). This technology facilitates effective discriminating between true data and noise. A port priority mechanism provides isolation between ports, thus reducing any crosstalk effect. The incoming Manchester encoded data is sampled at 16 samples per bit, which facilitates digital filtering of noise and crosstalk. A unique clock recovery facilitates the capture of data with rate variations of -2% to +4%.

Processing: Once the data is recovered and synchronized, it is processed. The processor analyzes the frame header. If a legal header is detected, the port is "marked" active and the data is allowed to flow through the star.

Outputs: The retransmitted data is regenerated, reclocked and lost sync bits are recovered. The data is reclocked at 50% duty cycle to eliminate clock jitter. The signal is restored to nominal amplitude and the pre-distortion logic compensates for anticipated phase shift and attenuation.

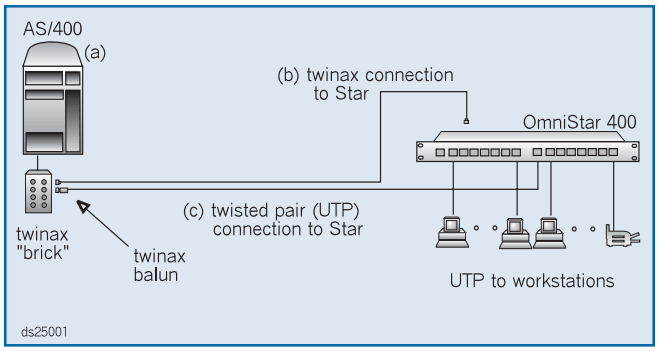
Displays: True data activity and parity errors are displayed by green and red LEDs. The green activity LEDs assist in monitoring signal strength and polarity while the red Parity Error LED assists in monitoring connectivity quality, signal strength, impedance mismatches and reflections.

SAMPLE APPLICATIONS

The following diagram depicts two typical applications of the OmniStar 400. A dual star is used to show the two different cases:

In the first case a host (a) is connected directly to the star via twinax (b) cable. In the second case the host (a) is connected to the star via a balun and a UTP wire (c).

In both cases the workstations are connected to the star via UTP cables.



SPECIFICATIONS

- **Protocol:** IBM 5250 and 5250 Express for Systems AS/400 and 3X
- **Interface:**
  - **Host:** One (1) Twinax, One (1) UTP RJ11/45
  - **Device:** Seven (7) RJ11/45 (RJ11 pins 3-4, RJ45 pins 4-5 are standard)
- **Cable Types:**
  - **Twinax:** IBM 7362229 or equivalent
  - **UTP:** Category 3 (EIA/TIA 568) or higher, (shorter distance @ lower grade)
- **Data Rate:**
  - **Standard 5250:** 1 Mbps -2%, +4%
  - **5250 Express:** 1 or 2 Mbps -2%, +4%
- **Supported Distances:**
  - **Twinax:** 5,000 ft.
  - **UTP:** 3,000 ft.
- **Physical features:**
  - **Rackmounted:** W:19.0"xD:6.0"xH:1.75"
  - **Tabletop:** W:17.5"xD:6.0"xH:1.75"
  - **Weight:** 7 lbs.
- **Power:** 115 or 230 VAC, 150 mA
- **Temperature:**
  - **Operating:** 0 to 40 degrees C
  - **Storage:** -40 to 75 degrees C
- **Humidity:** Up to 90% (non condensing)

ORDERING INFORMATION

Standard 5250	5250 Express	Description
2500	2560	Single, Half size tabletop
2501	2561	Dual, Dual Power Supply, Stackable
2503	2563	Dual, Dual Power Supply, Rackmountable
2506	2566	Single (upgradeable to Dual), Stackable
2507	2567	Single (upgradeable to Dual), Rack-mountable
2508	2568	Dual, Stackable
2509	2569	Dual, Rack-mountable
2510	2570	Single Upgrade Kit (2510 for models 2506, 2507; 2570 for models 2566, 2567)

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