

## X.21 LS Buffers



**Get bidirectional buffers on each port  
and make your network more efficient.**

## FEATURES

- Up to four DTEs or DCEs per link. Share the same port, in any combination.
- Compensate for systems having different clock sources, syncing data and control-character transmission.
- Ideal for synchronous network environments.
- Individual subchannels enable and disable switches.
- Anti-streaming automatically removes a defective terminal from service.

## OVERVIEW

So you want a cost-effective way to expand your existing leased-line polled network without adding computers or communication links?

Sure, others offer high-speed modem and port-sharing tools, but they probably don't support bidirectional buffering on each port. To get that, you might have to buy additional tail-circuit buffers. Do you really want that many boxes in your data stream?

The simple, affordable solution is the X.21 LS Buffer.

Up to four DTE or DCE devices can share the same port, in any combination, using the contention and control protocols normally found in host hardware and software. The ports are DTE/DCE selectable and meet the ITU X.21 standard, so you can be assured of synchronous operation in the network by both data terminal and data circuit equipment.

Once installed, the buffer boosts the efficiency of your system and network by drawing upon the host processor's power and reducing the idle time associated with many host-terminal traffic sessions. The buffer temporarily stores information sent and received between multiple devices with different data-handling speeds and abilities. It then releases the data at slower speeds.

Ideal for synchronous network environments, the X.21 LS is protocol-transparent at data rates up to 1.024 Mbps. Data arrives at the master port and is continually broadcast to all subchannels.

The 512-bit buffer also clocks data between different network carriers, synchronizing the transmission of data and control characters. This adjustable capacity and data clocking make it an ideal choice for VSAT or land-line applications. It reclocks data when the clock rate is at the same rate, but it won't lock onto the frequency of the different network carriers, so no external tail-circuit buffers are needed. This elastic tail-circuit buffer compensates for different clock sources. Clocking may be accomplished from any port of the unit, and two modes are available for fallback clocking.

In applications where both the master port and the selected port provide their own clocks, data is clocked into the buffer at the receive rate of the active port and clocked out using the master port transmit clock.

What's more, the 4-port buffers feature a Channel 4-only mode, which forces Port 4 as the active port to the master port. Data and clock are then rebroadcast out to Ports 1–3 after passing through the master port.

And, unlike most other sharing devices, the buffer can be adjusted as your network changes. Using Field-Programmable Gate Array (FPGA) technology, you're able to reprogram the buffer when sharing devices are added, so the X.21 LS can, therefore, grow with your network without needing new hardware. Your investment is protected.

The X.21 LS is housed in a sturdy rackmount metal enclosure and is equipped with a 110/220-VAC switch-selectable linear power supply.

## Technically Speaking

The X.21 LS Buffer also features the following functions:

**Automatic Removal**—The buffer contains circuitry that, when enabled, will automatically remove a streaming DCE or DTE from service.

Each channel has a green and yellow LED to indicate subchannel activity. If a terminal goes into the streaming condition (Control continually high), the DTE will automatically be removed from service until you correct the DTE fault. All other DTEs will continue to be serviced.

Upon installation, you can set or fine-tune the timer to your network requirements.

**Internal Clock Selection**—The device also provides circuitry that allows you to select internal clocks. Though the X.21 LS is externally timed by the telco provider, the internal clock rates are very useful for testing and diagnostic purposes.

**Subchannel Scanning**—This allows equal access to the communications link for all connected DCE or DTE devices. The subchannels are scanned in sequence, and the attached subchannel that raises Control (C) or Indicate (I) will have access to the communications link. After the subchannel drops (C) or (I), the buffer will continue scanning in sequential order.



TL572A

## Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

### Recognize any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.
- It's 9 p. m. and you need help, but your vendor's tech support line is closed.

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

## TECH SPECS

**Anti-Streaming** — Automatic, selectable timeout intervals; Disable, selectable via DIP switch

**Capacity** —

TL572A, TL574A: One to four ITU X.21 devices;

TL573A: One to two ITU X.21 devices

**Clock Source** — From Composite (master) port or subchannel Port 1

**Data Format** — Transparent at all data rates

**Data Rate** — Up to 1.024 Mbps

**Flow Control** — Indicate and Control leads

**Memory** —

TL572A–TL573A: Buffer up to 512 bits, First-In, First-Out (FIFO) principle with automatic re-centering;

TL574A: Buffer up to 8 bits, FIFO principle with automatic re-centering

**User Controls** — Switches to enable/disable each channel

**Interface** — ITU X.21, V.11 using DB15 female connectors

**Connectors** —

Subchannel ports: TL572A, TL574A: (4) DB15 female;

TL573A: (2) DB15 female

Master ports: (1) DB15 female

**Indicators** — Front panel: Power, Send/Receive Data, Channel Active, Channel Stream, FBT-1, FBT-2

**Environmental** — Operating Temperature: 32 to 122°F (0 to 50°C);

Humidity: 5 to 95% relative (noncondensing);

Maximum Altitude: 10,000 ft. (3048 m)

**Power** — 100–120 or 200–220 VAC, 50/60 Hz, internal, switch-selectable

**Size** — 4-port models: 1.8"H x 17"W x 9"D (4.6 x 43.2 x 22.9 cm);

2-port model: 1.7"H x 9"W x 9"D (4.3 x 22.9 x 22.9 cm)

**Weight** — 4-port models: 4.5 lb (2 kg);

2-port model: 3 lb (1.4 kg)

Item	Code
X.21 LS	
512-Bit Buffer 4-Port	<b>TL572A</b>
2-Port	<b>TL573A</b>
8-Bit Buffer 4-Port	<b>TL574A</b>

### You may also need...

DB15 Cable with EMI/RFI Protection, Male to Male

6-ft. (1.8-m)

**EGM15E-0006-MM**

10-ft. (3-m)

**EGM15E-0010-MM**

20-ft. (6.1-m)

**EGM15E-0020-MM**