

Benefits of Standalone DSU/CSUs

versus integrated multirate T1/FT1 DSU/CSU

Featuring
TSU Products

Standalone DSU/CSUs establish an intelligent demarcation point between the customer and carrier or ISP. The standalone DSU/CSU clearly defines a demarcation point between the provider's network and the customer's network. From a service provider's point of view, non-traditional carriers (such as ISPs and CLECs) offering "one stop shopping" for WAN solutions, the standalone DSU/CSU enables them to provide network management independent of the router as a value-added service. Integrated solutions do not define a clear boundary between the LAN and WAN.

Enhanced Lightning protection

Standalone DSU/CSUs provide lightning protection and isolate the router from the WAN circuit. In the event of a voltage surge, it is less costly to replace a damaged standalone DSU/CSU than to replace an entire router. Since integrated DSU/CSUs do not completely isolate the router from the line, there is a possibility of damage to the router during a high voltage surge.

Superior receiver sensitivity

ADTRAN T1/FT1 DSU/CSUs offer superior receiver sensitivity accommodating loop loss to -36dB (-45 dB in the 56/64K DSU/CSUs). In dry copper applications, superior receiver sensitivity can mean 50 percent greater transmission distance. This distance helps avoid potential problems common to long loop or "noisy" circuits. Integrated T1/FT1 DSU/CSU units are typically limited to loop loss performance of approximately -24dB.

Easy access to diagnostics/testing

ADTRAN standalone DSU/CSUs offer the choice of front panel terminal or Telnet access for running diagnostics and testing the circuit. Front panel access simplifies testing and analysis, especially for a field technician. Integrated DSU/CSU diagnostics must be accessed using router operating system syntax, command line interface, etc., and require intimate knowledge of router navigational aspects. In addition, third-party assistance is often required to troubleshoot WAN connections; and complex, proprietary interfaces often create difficulties in obtaining basic information.

Offer smoother migration from 56/64 Kbps to T1/FT1 services

Since standalone DSU/CSUs provide a serial interface to the DTE equipment, changing out the DSU/CSU is all that is required when the access line rate increases from 56/64 kbps to FT1 or full T1 rates. Typically, integrated 56/64 kbps DSU/CSU units cannot be upgraded to support FT1/T1 rates.

Provide access to integrated services

Today's providers supply multiple integrated services over a single T1 circuit. Installing a standalone T1/FT1 DSU/CSU with multiplexing capability saves on monthly line costs by utilizing a single circuit for voice and data. Integrated DSU/CSUs only support a single data connection with no ability to multiplex other services.



TSU ACE

1200295L1



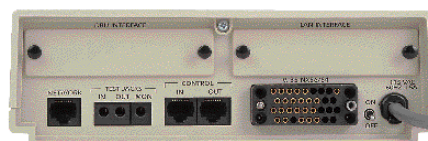
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1202060L1



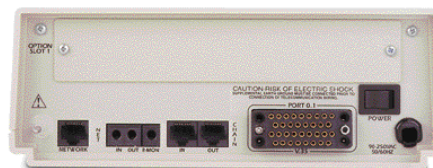
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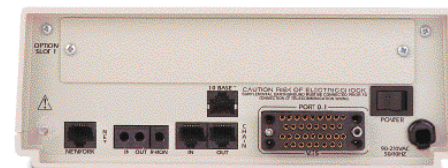
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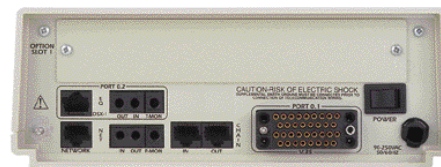
TSU 100

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TSU 100e

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TSU 120

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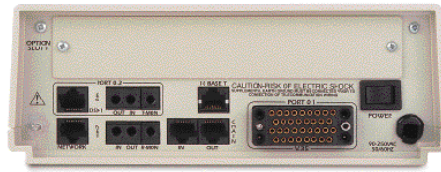


Built-in dial backup capability

Standalone DSU/CSUs offer built-in, cost-effective automatic switched back-up in the event of a dedicated network failure. In the integrated solution, back-up would require a second router port, internal or external DSU/CSU, and additional router programming.

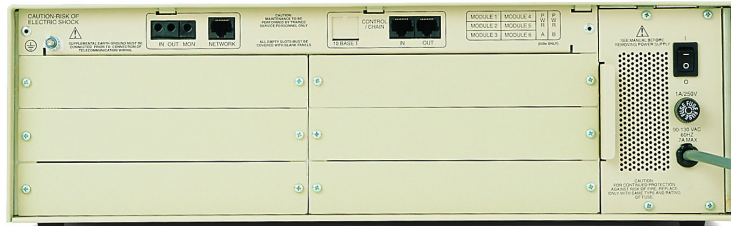
Superior product warranty and technical support

ADTRAN products are warranted for five years, and extended maintenance agreements are available. Toll-free technical support is available 7x24 at no extra cost and is recognized as the finest in the industry. The standard warranty for some router vendors with integrated DSU/CSUs is 90 days and can be extended with optional maintenance agreements. Many of these vendors purchase the integrated DSU/CSU modules from other vendors through OEM agreements which could cause problems during troubleshooting.



TSU 120e

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TSU 600

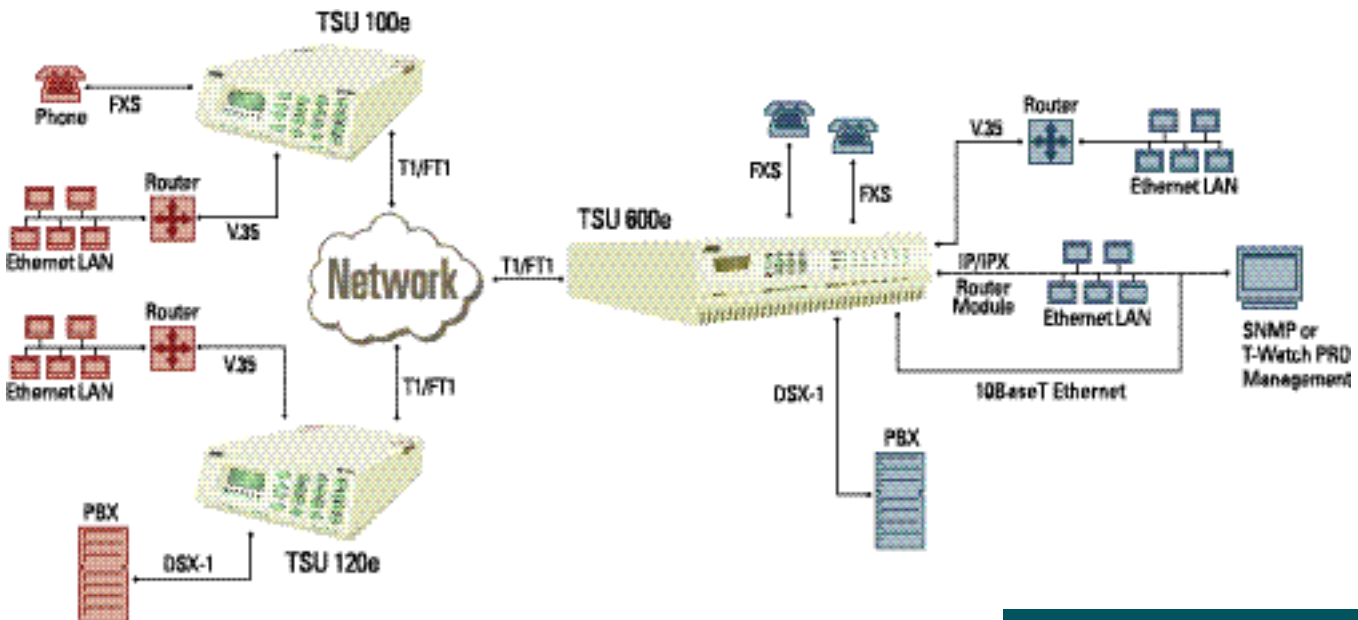
1202076L2



TSU 600e

1202076L1

Example of external DSU/CSU use.



For More Information

www.adtran.com
 ADTRAN, Inc.
 901 Explorer Blvd.
 Huntsville, AL 35806

General Information
 800 9ADTRAN
 info@adtran.com

Applications Engineering (Pre-Sale)
 800 615-1176

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