Data Sheet

Cisco T1 DSU/CSU WAN Interface Card (WIC-1DSU-T1-V2)

Updated T1 WAN Interface Card with Integrated DSU/CSU Simplifies Internet/Intranet Access by Reducing Deployment and Management Tasks.

The updated Cisco® T1 data service unit/channel service unit (DSU/CSU) WAN Interface Card (WIC) is an integrated, fully managed DSU/CSU for T1 or fractional T1 service. The WIC-1DSU-T1-V2 is an updated version of the WIC-1DSU-T1, offering additional supported features with the same performance.

The Cisco T1 DSU/CSU WIC is supported on the Cisco 1700 Series, 2600XM Series, 3631, and 3700 Series routers, and Cisco ICS 7750 Software. It provides a cost-effective router-DSU/CSU combination with the following benefits of integration:

- Fewer devices and cables to deploy and manage
- Remote and local configuration, monitoring, and troubleshooting via the Cisco IOS® Software CLI and Simple Network Management Protocol (SNMP)
- Flexibility and investment protection
- Single-vendor support
- Enhanced reliability
- Physical space savings

Features

- T1 or fractional T1 network interface
- Wet T1 support (not available on WIC-1DSU-T1)
- N x 64 kbps or N x 56 kbps nonchannelized data rates (N = 1 to 24)
- Standards-based, including ANSI T1.403 and AT&T Publication 62411
- Full management features:
  - *Configuration*—Capability for remote configuration via Telnet from Cisco IOS CLI.
  - *Monitoring*—Router and DSU/CSU are manageable as a single SNMP entity; extensive DSU/CSU statistics are provided by the Cisco IOS CLI.
  - *Troubleshooting*—Extensive loopbacks (including manual button for network line loopback), bit error rate tester (BERT) test patterns, alarm counters, and performance reports, all of which are accessible from Cisco IOS CLI. LEDs for carrier detect, loopback, and alarm functions.

Figure 1
Cisco T1 DSU/CSU WAN Interface Card

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Benefits of an Integrated, Fully Managed Solution

The T1 DSU/CSU WIC enables trouble-free Internet/intranet access with a simple, fully managed, integrated solution from a single vendor. Its ease of configuration and management differentiates it from external or separate DSUs/CSUs. Full management capability and modularity differentiates the T1 DSU/CSU WIC from other integrated router-DSU/CSU solutions, which typically have limited management and fixed configuration. This card delivers flexibility and investment protection, extending the growing family of WICs for Cisco 1700 Series, 2600 Series, 3631, and 3700 Series routers and Cisco ICS 7750 Software.

Reduced Deployment, Management Time, and Costs

`Ease of configuration and management`—The Cisco T1 DSU/CSU WIC simplifies tasks in the following ways:

- Easily configures via Cisco IOS Software initial setup, a utility that prompts a series of basic configuration questions upon router startup.
- Allows simplified remote and local configuration, management, and troubleshooting of the DSU/CSU from Cisco IOS CLI:
  - Using the familiar Cisco IOS CLI eliminates the need to learn or use command syntax for an external DSU/CSU
  - Convenient Telnet or Secure Shell (SSH) Protocol connection to the router eliminates the need for out-of-band management of external DSUs/CSUs
  - Cisco IOS CLI provides extensive DSU/CSU statistics (such as 24-hour history) and troubleshooting capability (such as DSU/CSU self test, loopbacks, DSU/CSU reset, alarm counters, and T1 statistics)
- Offers simplified SNMP management, with router and DSU/CSU managed as a single SNMP entity through CiscoWorks/CiscoView. The Cisco T1 DSU/CSU WIC SNMP agent supports the standard MIB II, Cisco integrated DSU/CSU MIB, and T1 MIB (RFC 1406). All T1 performance statistics can be monitored. The router also generates the appropriate SNMP traps in response to DSU/CSU alarms.
- An end-user-initiated manual loopback button allows users at remote sites to easily initiate a T1 network line loopback by pushing a recessed button on the WIC front panel without having to access the router via a console port or Telnet.
- Provides LEDs for carrier detect, loopback, and alarm, allowing for quick troubleshooting.

Physical convenience—No additional space is needed because the Cisco T1 DSU/CSU WIC is inserted into the router. This integrated solution eliminates the need for a separate serial cable, reducing deployment time and cost.

High reliability—The integrated DSU/CSU reduces the number of components in the network, leading to higher reliability. The serial cable that connects a router serial port to an external DSU/CSU is eliminated. The integrated DSU/CSU is powered from the router, eliminating the power supply for an external DSU/CSU. The Cisco 2600XM, 3600, and 3700 series are all available with redundant power systems, which cover the integrated DSU/CSU.

Flexibility and Investment Protection

The Cisco T1 DSU/CSU WIC extends the Cisco commitment to providing customers with maximum flexibility and investment protection through modular WICs that are supported on award-winning router platforms. When WAN bandwidth requirements or service provider pricing change, users can easily change WAN services either by changing

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the software configuration or replacing the WIC. Because the same card can be used on Cisco 1700, 2600XM, and 3700 series router platforms, the number of stocking units can be reduced, and the WIC can be redeployed from one platform to another.

Single-Vendor Support

Because the DSU/CSU plays an equally critical role as the router in helping to ensure WAN connectivity, many customers feel that it is important to have a support contract for both. Support for the integrated DSU/CSU is included in the maintenance contract for the Cisco router at no extra charge. However, if the router and DSU/CSU are from different vendors, it can be inconvenient to manage support contracts from multiple vendors. Further, when you need service and support, it is difficult to pinpoint a problem when phone calls have to be made to different vendors.

Cisco provides single-vendor support for its routers, integrated DSU/CSUs, and other network equipment. With its dedication to reliable support and customer satisfaction, Cisco offers numerous support programs to meet your business needs, including onsite support. A single phone call to a single vendor—Cisco takes full ownership of support when needed.

Enhanced Reliability

An integrated solution has fewer components; hence, fewer points of failure (for example, one less power supply and fewer cables). This leads to enhanced reliability.

Consistency with WIC-1DSU-T1

The Cisco T1 DSU/CSU WIC offers all of the features of the WIC-1DSU-T1 and can be smoothly deployed without requiring any additional learning.No

	WIC-1DSU-T1-V2	WIC-1DSU-T1
Description	Updated one-port T1/fractional T1 DSU/CSU WIC	One-port T1/fractional T1 DSU/CSU WIC
Router families supported	1700[1](1720, 1721, 1751, 1760), 2600XMs, 2691, 3631, 3725, 3745, and ICS 7750	1600[2], 1600R[2], 1700[3], 2600, 2600XM, 3600, and 3700
Wet T1 Capable	Yes	No
Short Cable Length Command	Yes; used to configure attenuation for short cable lengths (<660 feet)	No
Network Equipment Building Standards (NEBS)	Yes: Type I/III	No

1. Cisco 1701, 1710, 1711, and 1712 are fixed-configuration routers and do not support the WIC-1DSU-T1-V2. Also, the Cisco 1750 does not support this WIC.
2. Note: Cisco 1600 and 1600R routers are no longer sold by Cisco.
3. Cisco 1701, 1710, 1711, and 1712 are fixed-configuration routers and do not support the WIC-1DSU-T1.

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Specifications

Product Number	Description
WIC-1DSU-T1-V2	Updated one-port T1/fractional T1 DSU/CSU WIC

Cisco IOS Software Release

12.2(15)ZL PCBU special [Cisco 1700 Series only] (available from Cisco.com 6/16/03)

12.2(17) Mainline

12.3(1) Mainline

12.3(1st)T (estimated to be available from Cisco.com on 7/28/03)

Dimensions and Weight

Width

3.1 in. (7.9 cm)

Height

0.8 in. (2.1 cm)

Depth

4.8 in. (12.2 cm)

Weight

0.14 lb (62g)

Network Interface

Transmit bit rate

1.544 Mbps +/- 50 bps

Receive bit rate

1.544 Mbps +/- 100 bps

Line code

AMI, B8ZS

AMI ones density

Forced/bit robbing (N X56)

High-Level Data Link Control (HDLC) data inversion (N X64)

Framing format

D4 (SF) and ESF

Output level (LBO) [dB0?]

0, -7.5, or -15 dB

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Input level

+1 dB0 to -24 dB0

Data Interface

Data rates

N x 64 kbps (N = 1 through 24); nonchannelized

N x 56 kbps (N = 1 through 24); nonchannelized

Interface connector

RJ-45

System timing

Network and internal

Diagnostics

Loopbacks

Network line loopback; user initiated

Recessed push button for network line loopback; toggle on/off

Network line loopback; telco initiated

Network payload loopback

Local date terminal equipment (DTE) loopback

Remote line and payload loopback (codes: V.54 loop up, and loop down)

Self-test

Self-test activated by user

Test patterns (BERT)

1:2, 1:5, 1:8, 3:24, QRW, All 0s, All 1s, user-programmable 24-bit patterns

Network (T1) alarms

Loss of network signal (red alarm); loss of network frame (blue alarm) (AIS) from network; receive (yellow alarm) from network [UNCLEAR]

Performance reports and error counters

Cyclic redundancy check (CRC), bipolar violation (BPV), OOF [EXPAND?], errored seconds, burst errored seconds, severely errored seconds, Ft and Fs framing errors for SF framing, FPS [EXPAND?] framing errors for ESF framing, 24-hour history stored in 15-minute increments

LEDs

CD (data carrier detect)

LP (loopback)

AL (alarm)

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Management

Telnet/console

Remote and local configuration, monitoring, and troubleshooting from Cisco IOS CLI

SNMP

Router and DSU/CSU managed by single SNMP agent; router, DSU, and CSU appear as a single network entity to user

Standard MIB (MIB II)

Cisco integrated DSU/CSU MIB

RFC 1406

SNMP traps

Generated in response to alarms

Regulatory Compliance

FCC Part 15 Class B

TIA/EIA-IS-968

Industry Canada CS-03 Part II

JATE Digital

CAN/CSA-C22.2 No. 60950-00

UL 60950-2000

IEC/EN 60950

TS001

AS/NZS 3260

NEBS Type I/III

Standards

AT&T Pub 62411

ANSI T1.403

Environmental

Operating temperature

0 to 40ºC (32 to 104 F)

Storage temperature

-20 to 65ºC (-4 to 149 F)

Relative humidity

10 to 85 percent noncondensing operating; 5 to 95 percent noncondensing, nonoperating

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