

# Datacommunication and Terminal Controller (DTC16)

## Technical Data

**Product Numbers**  
HP 2340A, 2343A/C/D

### Introduction

The DTC16 is part of HP's family of LAN-based Communication and Terminal Servers, HP's solution to connect local or remote asynchronous devices (terminals, printers, modems) to single or multiple HP 3000, HP 9000, and other platforms running the standard Telnet-TCP/IP protocols. The DTC16 is optimal for

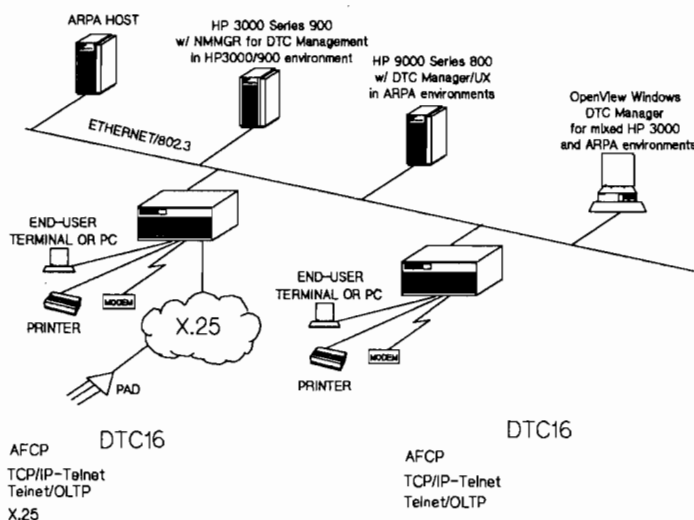
environments with the following requirements:

- Low port count or distributed connectivity to multiple systems including HP 3000/900 systems and systems running Telnet-TCP/IP.
- HP 3000/900 X.25 system to system communication.
- Remote X.25 PAD access to HP 3000/900, HP 9000, and other systems running Telnet-TCP/IP (PAD support).

For information on other DTC products, refer to the DTC family data sheet (which presents the complete DTC family, the target environments, and supported devices) and to the individual product data sheets:

DTC 16TN:	HP J2060A
DTC 72MX:	HP J2070A
DTC 16IX:	HP J2062A
DTC 16MX:	HP J2063A
DTC16:	HP 2340A
DTC48:	HP 2345A
DTC Management:	HP D2355A
	HP J2120A
X.25 iX Network Link:	HP J2079A
HP 3000 Telnet Access:	HP J2080A

### DTC16 Datacommunication and Terminal Controller



(also included in the Networking Communications Specification Guide).

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## DTC16 Key Features

- LAN-based communication server supporting the standard Telnet-TCP/IP protocols plus HP optimized high performance protocols for demanding OLTP applications in HP 3000/900.
- Systems are accessed directly through system LAN links or through system asynchronous ports (via the extended switching configuration or back-to-back) for systems which do not implement Telnet-TCP/IP or the HP 3000/900 protocol.
- Modular chassis supporting a mix of Asynchronous and X.25 interfaces
- Supports up to 16 RS-232 direct connect ports (12 modem ports)
- Provides compatible API with HP 9000 system asynchronous multiplexers.
- Provides printer sharing and multisessions per port.
- Supports one X.25 link (line speed up to 19.2 kbps) and 32 virtual circuits.
- Supports remote X.25-PAD access to HP 3000/900 systems and other systems running Telnet-TCP/IP.
- Supports X.25 communications for HP 3000/900 systems (HP-NS services, ARPA-FTP, OSI-FTAM, SNA).
- Managed under HP OpenView Windows environment, or from an HP system (HP 3000/900 or HP 9000/800).
- Supports an SNMP agent.
- Provides comprehensive support tools for increased supportability and uptime.

## Product Highlights

### High Performance Protocols

The DTC16 supports high performance protocols for demanding commercial applications: AFCP, an optimized protocol for OLTP applications running under the HP 3000/900

### Location-independent Access

The DTC16 provides location-independent access for end-users.

This means that most of the services provided to local users connected on a DTC port are also available to remote users

accessing the DTC via the X.25 network. (See details in the "X.25 services" below.)

### DTC16 Management

The DTC 16 is configured and managed with the use of a DTC Manager application that can run on three different platforms: HP 3000/900, HP 9000/800, or PC OpenView Windows.

- With the DTC host-based management, a simple terminal connected locally or remotely to the HP 3000/900 or HP 9000/800 system is used to manage DTCs. It provides a user interface similar to other system administration tools.
  - The HP 3000/900-based DTC management software provides a means to configure DTCs for use in HP 3000/900 standalone environments.
  - The HP 9000/800-based DTC management software provides a means to configure DTCs in HP 9000 standalone or multisystem Telnet-TCP/IP environments.
- The HP OpenView (PC-based) DTC Manager software provides an easy-to-use graphical user interface, to manage DTCs. It is possible to integrate other management applications of network elements (such as HP X.25 Switches and PADs) on the same OpenView Windows workstation. HP OpenView DTC Manager provides a means to configure DTCs for use to connect to HP 3000/900 or HP 9000/800 systems and to other systems in multivendor environments. It provides powerful network management features for complex network topologies.

In both host-based and PC-based environments, the DTC software is downloaded from the management platform, allowing easy distribution and control of the DTC software.

## DTC SNMP Agent

Besides the services provided by the DTC management platforms, the DTC-based SNMP agent allows customers to take advantage of SNMP-based management applications such as the HP OpenView Network Node Manager.

The following features are available with Node Manager:

- Automatic discovery of DTCs.
- Status/Colors management. The DTCs are automatically polled on a regular basis and the status color is reflected on the map.
- MIB loader/browser. It provides display of MIB values in text or graphical form and the capability to modify them if permitted by the DTC
- MIB application builder. It enables users to build applications dealing with DTC MIB objects.
- Historical data reporting for troubleshooting and network planning.

The DTC SNMP agent is supported on all DTC hardware and configurable from all the DTC management platforms.

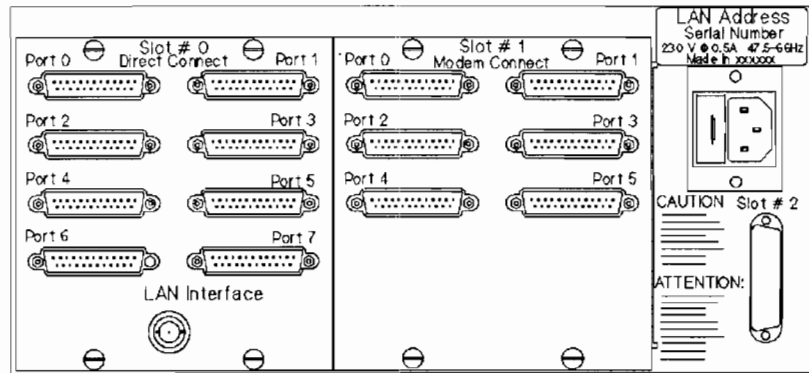
## DTC16 rack installation

The DTC16 can be installed in industry-standard EIA 19-inch racks such as the HP computer system cabinets C2785A, C2786A and takes 4 EIA height units.

Rack mount kit required for HP Racks: P/N 35199E.

## DTC 16 Product Specifications

The DTC 16 chassis has 2 slots that support asynchronous processor boards. In addition, an X.25 board can be supported in the DTC16.



### LAN interface

One standard connector is provided:

<b>Connector:</b>	<b>LAN supported</b>
BNC	ThinLAN (10Base-2)
or:	
802.3 AUI 15-pin	ThickLAN EtherTwist 10Base-T, Fiber Optic Broadband, FDDI connectivity through IEEE 802.3/Ethernet external adapters

### LAN services

Protocols supported	AFCP: HP 3000's high performance protocol TCP/IP Telnet
Addressing	Symbolic addressing (DNS and HP-NS) IP addressing

### Asynchronous processor boards

#### Interfaces available

8-port RS-232-C direct connect signals	RD, TD, ground
6-port RS-232-C modem connect signals	RD, TD, DCD, DTR, RTS, RI, DSR, CTS, DRS, shield and signal ground

#### Common characteristics

Connectors	female DB-25
Line speed	from 300 to 19,200 bps
Speed sensing	yes
Parity sensing	yes
Flow control	Xon/Xoff, HP Enq/Ack
Sessions/port	up to 5 sessions
Sessions/DTC	up to 80 sessions
Printer sharing	yes

#### X.25 Board

Interface/maximum line speed	RS-232-C/19.2 kbps
Number of Virtual Circuits (VCs)	up to 32

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### X.25 services

- System-to-system communications for HP 3000/900 systems (HP-NS services, ARPA-FTP, OSI-FTAM, SNA)
- Remote PAD access (incoming calls) to HP 3000/900, HP 9000, and systems running TCP/IP Telnet through one single X.25 interface
- Selectable PAD support profiles
- Closed User Group Utility
- Restricted access to predefined systems based on calling address for PAD users
- Support of character mode applications through VideoPAD (tested in France through Minitel 3613)

Limitations applying to remote X.25 users compared to DTC local users are:

- PAD printers are only supported for system access via a LAN (no back-to-back)
- Only character mode and VPlus Block mode applications are supported with PAD functionality
- Multisession is not available for remote PAD users
- X.25 characteristics cannot be reconfigured online.

X.25 specific characteristics are described in the "X.25/iX Network link" data sheet.

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### HP 3000 specific capabilities

Powerfail recovery  
Typeahead facility  
Field-mode support  
Device type managed by the system

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### HP 9000 specific capabilities

The DTC products use standard systems calls to access and control the DTC ports. This presents HP-UX applications with a programmatic interface that is almost identical to the interface to asynchronous systems MUX ports, thus allowing an easy migration from MUX to network environment.

This includes:

- DTC port identification,
- Host initiated sessions (printing, programmatic access) to DTC ports via standard.

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### System release requirement

HP 3000/900	MPE iX 2.2 or later
HP 9000	HP-UX 7.0 or later (for Telnet Access) HP-UX 8.0 or later (to run DTC Manager/UX or Telnet/OLTP)

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## Hardware Platform

### Physical specifications

**Height:** 152 mm (5.98 in)  
= 4 EIA Units  
**Depth:** 467 mm (18.39 in)  
**Width:** 325 mm (12.3 in)  
**Weight:** 8.8 kg (19.4 lbs)  
14 kg (30.8 lbs)

### Operating environment

**Temperature:** 0° to 55° C  
**Relative humidity:** 5% to 95%  
at 40° C  
**Altitude:** 4600m  
**Static discharge:** 15kV - no  
data loss

### Electrical specifications

**Current consumption:**  
**Typical** 0.27A/0.15A  
(115V/220V)  
**Maximum** 1.0A/0.5A  
(115V/220V)  
**Line frequency:** 50/60Hz

**Typical AC Input Voltage:**  
115V/230V

### Regulatory classifications

#### Emissions:

- FTZ 1046/84, FCC part 15 Class A
- EN55022 Class A
- VCCI Class 1
- SABS

**Safety:** UL, CSA, EN60950, SASO, B6301

## Ordering Information

### Ordering the DTC 16 products

**2340A** Main product: DTC 16

### LAN and Asynchronous option (must order one)

**ThinLAN** (includes BNC-T connector)

**642** 6 RS-232-C modem  
**842** 8 RS-232-C direct

**ThickLAN** (includes MAU and 6m AUI cable)

**640** 6 RS-232-C modem  
**840** 8 RS-232-C direct

**AUI** (no MAU provided)

**641** 6 RS-232-C modem  
**841** 8 RS-232-C direct

**Second asynchronous processor board** (can order one)

**650** 6 RS-232-C modem  
**850** 8 RS-232-C direct  
**310** X.25 board (can order one)

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## TCP/IP standards supported

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Ethernet/IEEE802.3, ping	
Subnet Addressing	RFC-950
ARP	RFC-826
ICMP	RFC-792
IP and options	RFC-791, MIL-STD 1777
TCP and options	RFC-793, MIL-STD 1778
UDP	RFC-768
Domain Name Services	RFC-1034-1035
SNMP agent	RFC-1157
Standard MIB services	RFC-1156
Structure of Management Information	RFC-1155
Telnet and options	RFC-854, MIL-STD 1782

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## X.25 standards supported

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X.25 CCITT 1980, 1984  
X.3/X.28/X.29 1980, 1984  
Closed User group (CUG) CCITT 1980  
Defense Data Network (DDN) specifications

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## Power supply option (can order one)

**015** 220V power for Europe and some Asia-Pacific countries

## Ordering the DTC 16 add-on products:

**2343C** 6 RS-232-C Modem  
**2343A** 8 RS-232-C direct connect  
**2343D** X.25 board

## Ordering the DTC manager application:

**DTC manager running on an HP 3000/900:** Nothing to order. Integrated with the MPE iX operating system (FOS)

## DTC manager running on an HP 9000/800:

### J2120A HP DTC Manager/UX

**AA0** Software on ¼-inch cartridge  
**AA1** Software on ½-inch MAGTAPE 1600 BPI  
**AAH** Software on DAT cartridge tape  
**AA4** Software on QIC cartridge tape  
**AAU** Software on CD-ROM  
**0CC** Update to latest version

## DTC manager running on the HP OpenView Windows platform:

### HP 32054E #201

HP OpenView Windows Workstation (PC) preconfigured with the DTC Manager application software

**ABA --> #ABZ** Localization options (must order one)

## Network connection options (must order one)

**101** ThinLAN connection  
**102** ThickLAN connection  
**D2355A** DTC manager application software for an HP OpenView Windows (PC) workstation  
**D1824E #201** Update of an existing HP OpenView Windows Workstation with the latest revision of software and DTC manager application

- The HP OpenView Windows workstation (HP 32054D) is an especially configured HP Vectra, with PC software already installed. It includes 4Mb of additional memory, HP portable DeskJet printer, MS-DOS®, MS-Windows®, HP ARPA, and Network Services/DOS, HP OpenView Windows, HP AdvanceLink for Windows

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