COMPAQ

Software Product Description

PRODUCT: TeMIP Access Module for Tadiran T::DAX SPD 80.18.00

DESCRIPTION

The TeMIP T::DAX Access Module (AM) provides an interface to the Tadiran T::DAX digital cross-connects (add-drop multiplexers) (software versions: Rel.3.0x (TDAX 100) and Rel.6.4x). This Access Module is a bi-directional module addressing fault management. It receives and processes unsolicited messages, as well as sends management commands and receives associated responses.

TeMIP is a family of software products for the management of telecommunications and corporate networks, including fixed wire and mobile/cellular voice and data, multi-vendor, multi-technology networks.

TeMIP V3.2 provides comprehensive off-the-shelf fault and trouble management functions such as Alarm Handling, Event Logging and Trouble Ticketing for telecommunications network management.

TeMIP supports the International Standards Organization (ISO) management standards ISO 10164-x and ISO 10165-x, the OMNIpoint 1 standards as defined by NMF and T1M1. TeMIP and its features are applicable in the context of the International Telecommunication Union-Telecom Standard Sector (ITU-T) X.73x and Telecommunications Management Network (TMN) M.3010 and M.3100 Recommendations.

TeMIP gives network operators a global view of their networks, and enables them to activate management functions and operations from single or multiple workstations.

TeMIP is built on top of the TeMIP Framework and fully benefits from the object oriented and truly distributed software architecture.

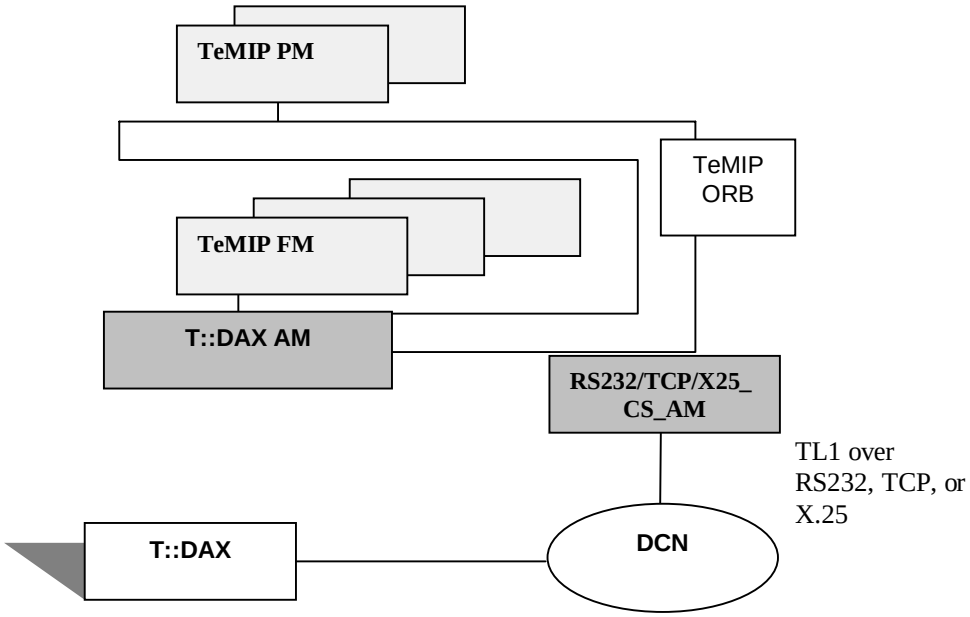
SOLUTION COMPONENTS

On the TeMIP side the solution is made of a combination of Management Modules:

- The RS232 or X.25 (Switched Virtual Circuits) or TCP (IP sockets) Communication Server Access Module is responsible for establishing and maintaining the physical connection to the equipment.
- The T::DAX AM is responsible for the Information Model representing the management capabilities of the equipment as well as all associated semantic translations between its ASCII-based messaging interface and TeMIP data models.

The solution components are shown in Figure 1.

Figure 1: Solution Components

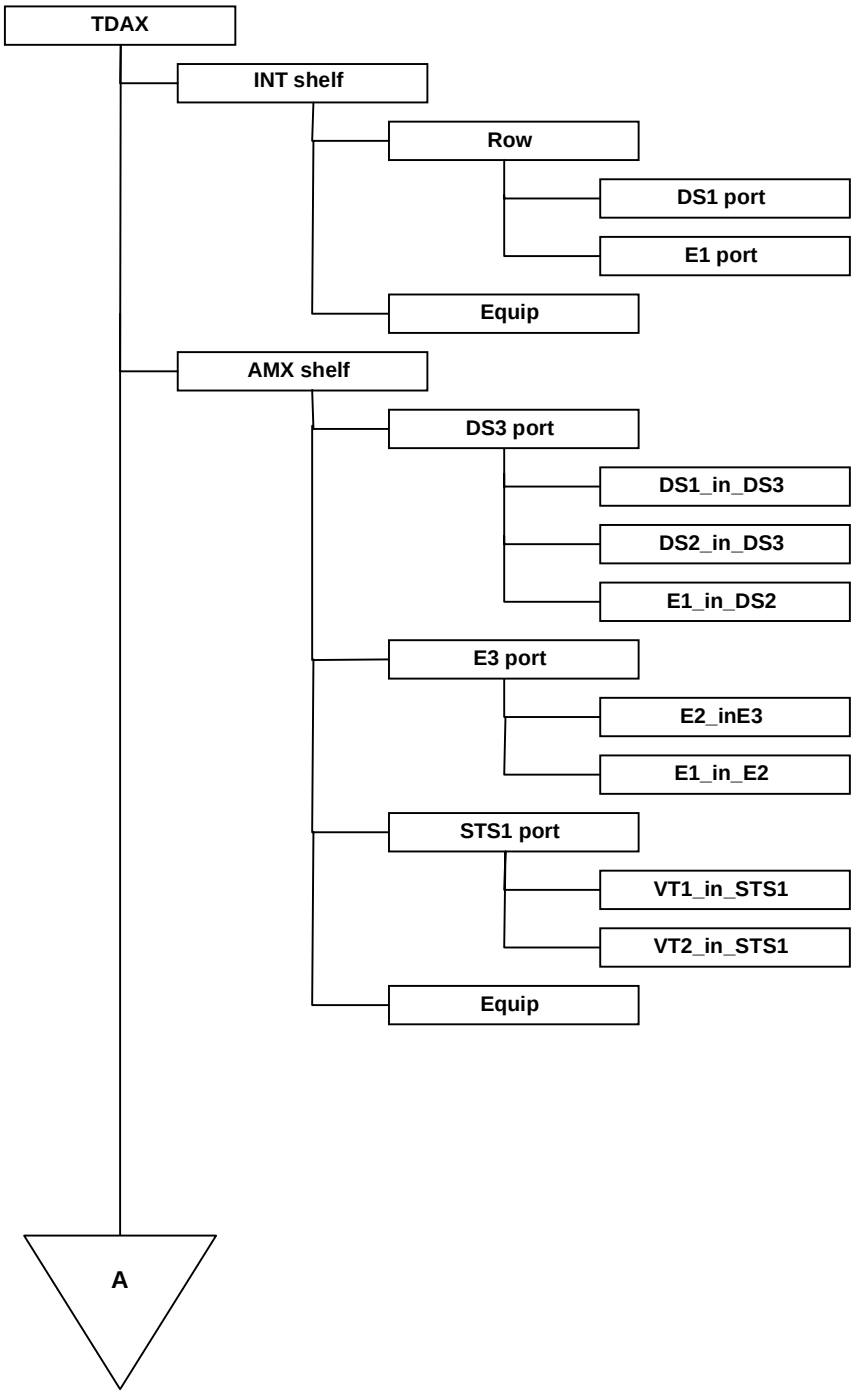


INFORMATION MODEL OUTLINE

The T::DAX supports the Information Model given in Table 1.

The Network Element is represented by the information Model introduced in Figure 2. Please note that grandchild classes and descendants further below are left out here. Details are provided in Table 1**.**

Figure 2: Information Model Overview



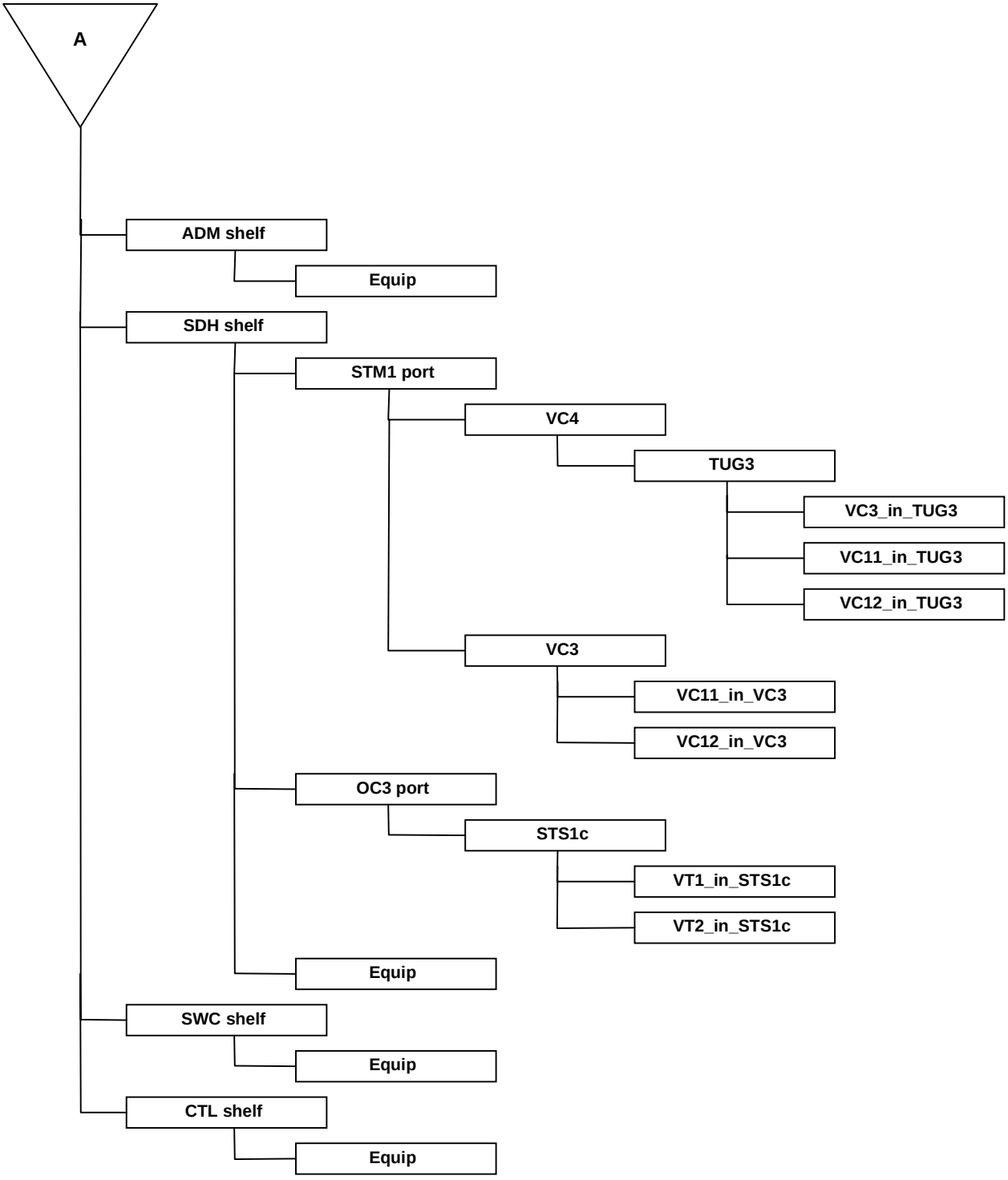

A
ADM shelf
Equip
SDH shelf
STM1 port
VC4
TUG3
VC3_in_TUG3
VC11_in_TUG3
VC12_in_TUG3
VC3
VC11_in_VC3
VC12_in_VC3
OC3 port
STS1c
VT1_in_STS1c
VT2_in_STS1c
Equip
SWC shelf
Equip
CTL shelf
Equip

Table 1: T::DAX AM Hierarchy Class Description

Global Class	Child Class	Description
TDAX		Global TeMIP entity. Represents a T::DAX node (add-drop multiplexer). A T::DAX node consists of a number of bays (racks). Each bay contains a number of shelves (sub-racks).
	Shelf	A T::DAX shelf is typically dedicated to some specialized function, like housing T1 ports.
	Equipment	Shelves are equipped with e.g. PSUs (Power Supply) that do not directly interface with physical lines.
	Row	T1 and E1 ports are arranged in rows (and columns) within an INT shelf.
	DS1 port, E1 port, DS3 port, E3 port, STS1 port, STM1 port, OC3 port	Interfaces to physical lines.
	DS1_in_DS3, DS2_in_DS3, E1_in_DS2, E2_in_E3, E1_in_E2, VT1_in_STS1, VT2_in_STS1, VC4, TUG3, VC3_in_TUG3, VC11_in_TUG3, VC12_in_TUG3, VC11_in_VC3, VC12_in_VC3, STS1c, VT1_in_STS1c, VT2_in_STS1c	Tributaries. A DS1_in_DS3 is e.g. a tributary within a DS3 signal (which may contain up to 28 DS1 tributaries). Note that intermediate tributary groups are not always referred directly (an *aid* referring to a DS1_in_DS3 does not directly refer to a DS2, although DS2 tributary groups are always present in a DS3 signal (with the exception of “clear” or “intact” DS3 signals, in which case no tributaries are present at all).

MANAGEMENT CAPABILITIES SUMMARY

Autonomous Messages Support

The T::DAX AM shall handle the following unsolicited messages pertaining to the Surveillance Interface:

- REPT ALM: Report Alarm,
- REPT ALM ENV: Report Alarm Environment,
- REPT EVT: Report Event,
- REPT PM: Report Performance Monitoring.

Limitation: the REPT PM messages are processed to the extent where they are parsed. No further processing of the parsed data shall be provided.

Commands support

The following commands pertaining to the Surveillance Interface shall be supported:

- RTRV-HDR: Retrieve Header,
- RTRV-ALM-ALL: Retrieve Current Alarms,
- ALW-REPT: Enable Autonomous Message Reporting,

- INH-REPT: Inhibit Autonomous Message Reporting,
- ALW-PMREPT-ALL: Enable Performance Monitoring Reporting,
- INH-PMREPT-ALL: Inhibit Performance Monitoring Reporting,
- ACT-USER: Session Logon,
- LGN: Session Logon,
- CANC-USER: Logoff,
- LOGIN: Start a session with NE,
- SendControlT: Set and reset the logging of the date/time on the formatted T::DAX terminal screen,
- SET-TH: Set Performance Monitoring Threshold,
- RTRV-TH: Retrieve Performance Monitoring Threshold,
- RMV-EQPT: Remove an Equipment unit from service,
- RST-EQPT Restore an Equipment unit to service.

Miscellaneous Management Capabilities

The T::DAX AM shall implement the features listed below:

- Keep-Alive message generation at regular/controllable intervals,
- Automatic Detection and reporting of communication failure,
- Automatic alarm state re-synchronization after communication failure,
- Duplicate alarms filtering.

Supported Messages, Commands and Responses

Table 2 indicates the Autonomous Messages, the Commands and their associated Responses that can be handled by the AM.

Table 2: T::DAX AM Supported Messages, Commands and Responses

	Type	Description
1.	Autonomous	REPT ALM : used to report one or more changes in state of some alarm condition
2.	Autonomous	REPT ALM ENV : used to report environmental alarms
3.	Autonomous	REPT EVT : used to report event logs, alarms of warning or indeterminate severity, and PM (Performance Monitoring) threshold alerts
4.	Autonomous	REPT PM : used to report PM counts. Only the non-zero PM counts are reported
5.	Command	RTRV-HDR : Retrieves Header (mapped on KeepAlive directive)
6.	Command	RTRV-ALM-ALL : Retrieves Current Alarms (mapped on Resynchronization directive)
7.	Command	ALW-REPT : Enables the reporting of alarms (including environmental alarms) (mapped on ReportAlarm directive)
8.	Command	INH-REPT : Stops the reporting of alarms (including environmental alarms) (mapped on SuspendAlarm directive)
9.	Command	ACT-USER : Session logon to start a session with Network Element
10.	Command	LGN: Enables a CIT user to enter the system and be able to enter TL1 commands. If the
		CIT is already logged in, the command has no effect. This command applies to T::DAX100 only.
11.	Command	LOGIN : start a session with NE.
12.	Command	CANC-USER : Logoff to log out of a session with the Network Element
13.	Command	SET-TH : Sets the current performance monitoring threshold level (mapped on WriteThreshold directive)
14.	Command	RTRV-TH : Retrieves the current performance monitoring threshold level (mapped on ReadThreshold directive)
15.	Command	RMV-EQPT : Removes an equipment unit from service
16.	Command	RST-EQPT : Restores an equipment unit to service
17.	Command	SendControlT : Sends a ‘control T’ to the NE.
18.	Response	Normal Response without Textblock
19.	Response	Error Response
20.	Response	Retrieve Alarm normal response
21.	Response	Retrieve Performance Monitoring Threshold normal response

HARDWARE REQUIREMENTS

Supported Alpha AXP Processors:

DIGITAL Personal Workstation au series
DIGITAL Ultimate Workstation
AlphaStation 600
AlphaServer 800, 1000A, 1200
Compaq AlphaServer DS10, DS20

AlphaServer 2000, 2100, 4000, 4100
Compaq AlphaServer ES40

AlphaServer 8200, 8400
Compaq AlphaServer GS60, GS140

Disk Space Requirements:

Disk space required for installation:
Subset copy: 29,000 Kbytes
Installation: /usr 105,000 Kbytes

Disk Space Required for Use (Permanent):
No specific requirement

Memory Requirements:

The minimum memory supported, due to a TeMIP Framework prerequisite, is 128 Mbytes. However, the use of this software in conjunction with increased memory capability improves performance.

SOFTWARE REQUIREMENTS

Compaq Tru64 UNIX V4.0D or V4.0F

TeMIP Framework V3.2

A TeMIP Graphical ASCII Toolkit run time license per Access Module is also required

OPTIONAL SOFTWARE

TeMIP Graphical ASCII Toolkit V2.0.

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the current version requirements.

YEAR 2000 READY

This product is Year 2000 Ready.

The testing used to confirm the Year 2000 readiness of this product included code assessment and system tests to verify transition dates. This product is Year 2000 Ready.

"Year 2000 Ready" products are defined by Compaq as products capable of accurately processing, providing, and/or receiving date data from, into and between the twentieth and the twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the associated Compaq product documentation and provided that all hardware, firmware and software used in combination with such Compaq products properly exchange accurate date data with the Compaq products.

For additional information visit Compaq's Year 2000 Product Readiness web site located at http://www.compaq.com/year2000

To ensure that this product is Year 2000 Ready, code assessment and system tests to verify the transition between December 31st 1999 and January 1st 2000 were utilized.

To ensure that this product interoperates properly with other hardware and software, the system tests involving Compaq's TeMIP V3.2 are applicable, as this product was verified as being Year 2000 Ready.

DISTRIBUTION MEDIA

This software is available by electronic means, distributed directly by the Compaq TeMIP Engineering Team, who can be contacted through your local Compaq office, which sends an internal e-mail to vbetemipsupp@compaq.com (containing customer identification and proof of license purchase).

ORDERING INFORMATION

TeMIP Access Module for Tadiran T::DAX

Software License:

- QM-6FDAA-AA

Software Product Services:

- QT-6FD**-T* or QR-SP6FD-A9

Notes:

1. * denotes variable fields. For additional information on available services, or hardware platform tiers, refer to the appropriate price book.
2. The QM number corresponding to the TeMIP Graphical ASCII Toolkit V2.0 (Run-Time) must also be purchased (QM-5SMAA-AA).

SOFTWARE LICENSING

This software is furnished under the licensing provisions of Compaq Computer Corporation's Shrinkwrap Terms and Conditions.

For more information about COMPAQ's licensing terms and policies, contact your local COMPAQ office.

This layered product supports the UNIX FLEXlm Software License Key system.

A FLEXlm key must be obtained using information provided with the license deliverable. An authorization number is provided for each license, which allows the user to obtain license keys from an Internet Web Server according to instructions provided with the License Certificate.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from Compaq. For more in formation, contact your local Compaq office.

SOFTWARE WARRANTY

This software product is provided by Compaq with a 90-day conformance warranty in accordance with the Compaq warranty terms and applicable to the license purchase.

The above information is valid at the time of release. Please contact your local Compaq office for the most up-to-date information.

TRADEMARK INFORMATION