



Dialogic[®] DSI Protocol Stacks

User Guide: Running DSI User Parts Over Dialogic[®] TX Series SS7 Boards

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Revision History

Issue	Date	Description
2	02-Feb-10	Clarification to Solaris (SPARC) installation.
1	02-Oct-09	Initial Release

Note: The current version of this User Guide can be found at:
<http://www.dialogic.com/support/helpweb/signaling>

1 Overview

To expand the capabilities of existing deployments in the field, the Dialogic® DSI host-based SS7 User Part protocols have been made available to the users of the Dialogic® TX Series SS7 Boards (referred to herein as “TX Series” or “TX Series board”).

This increases the range of protocol stacks available to the TX Series user (in particular, the transaction-based protocols running above SCCP, which include the MAP, TCAP, ANSI-41, INAP and CAMEL V1-V4 offerings) and when combined with the ability to run these protocols on the host (with full access to the host’s resources / abilities) expands the range of applications a TX Series board can undertake using Dialogic products.

This is accomplished by the use of the TXA software module, which provides an adaption layer between the Dialogic® DSI Protocol Stacks and the TX Series MTP3 protocol running on the board enabling a DSI Protocol interfacing to MTP3 to be run on the host above the TX Series board while allowing ISUP to (optionally) still run on the board. The TX Series board continues to be configured using the existing interface, and the DSI Protocols are configured using config.txt or the DSI message-based interface.

1.1 Related Documentation

- TX 4000 Installation Manual 62334-14
- TX 4000C Installation Manual 62376-13
- NMS SS7 Configuration Manual 6464-28
- SS7 Health Management Developer’s Reference Manual 6689-17
- TX Utilities Manual 6437-19
- NMS MTP 3 Developer’s Reference Manual 6465-24
- Dialogic® Distributed Signaling Interface Components - Software Environment Programmer's Manual – U10SSS

Current software and documentation supporting Dialogic® products is available at

<http://www.dialogic.com/support/helpweb/signaling>

1.2 Scope

This document describes the usage of the TXA software module, which allows the use of the Dialogic® DSI Protocol Stacks above Dialogic® TX Series SS7 Boards (TX4000, TX4000C and TX5000E).

It provides an overview of system configuration and gives details of other configuration commands which must be used.

2 Usage

2.1 Description

The TXA software module provides an adaption layer between the APIs of the DSI user part modules and the TX Series MTP3 layer.

The diagram below illustrates an example of a system where a current user ISUP application has been supplemented by the addition of two DSI user parts each running above a separate instance of the TXA software module.

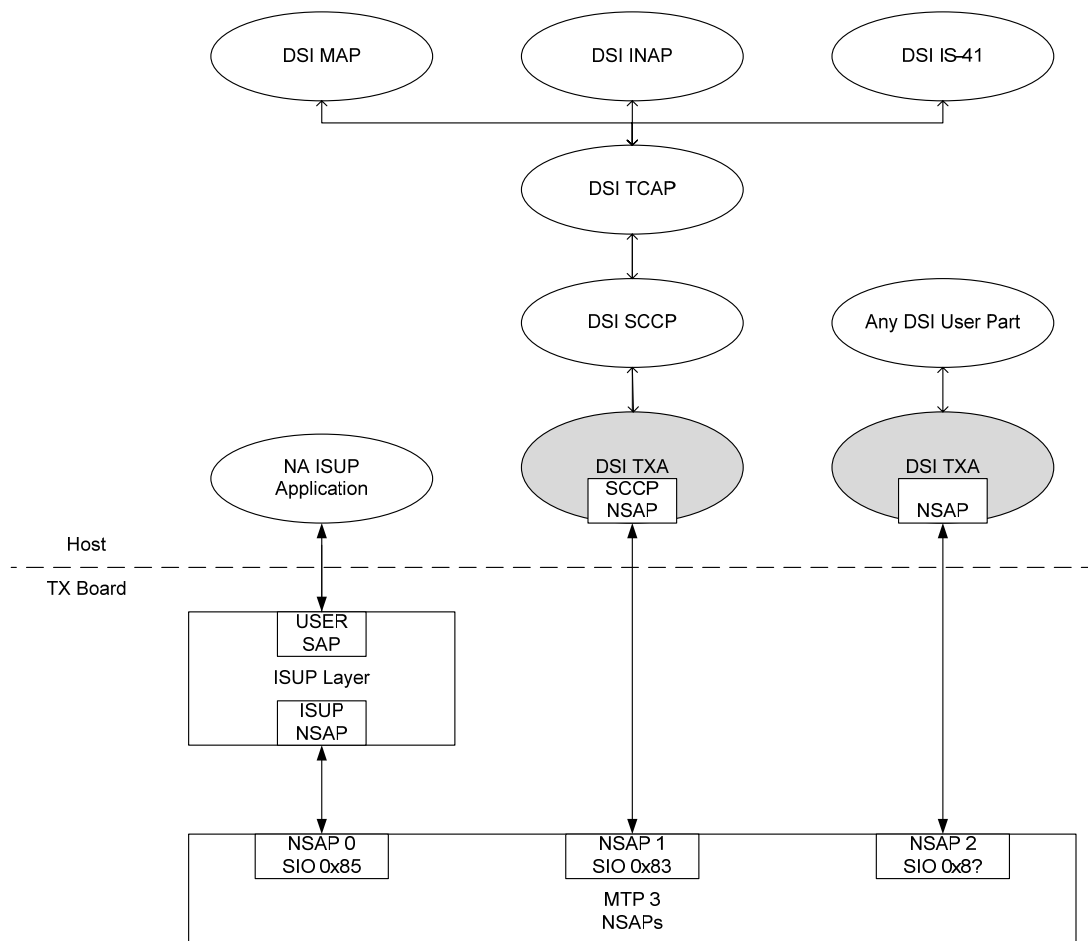


Figure 1. Dialogic® DSI Protocol Stacks and Dialogic® NaturalAccess™ ISUP Layer Running on the Same Board.

2.2 Configuration

The TX Series MTP2 / MTP3 and user parts are invoked and configured via the standard TX Series configuration files and utilities, e.g., ss7load, MTP3cfg1.txt etc.

The DSI user parts are invoked via the standard DSI gctload and system.txt files and configured via s7_mgt utility (and config.txt) or via the MSG configuration interface.

The TXA module is invoked and configured via system.txt using a command line interface (see section 5).

3 Compatibility

The TXA software module is compatible with Dialogic® NaturalAccess™ Signaling Software R5.1 or later, and it will work with the Linux, SPARC Solaris and Windows® Operating Systems supported by Dialogic® NaturalAccess™ R8.1 Development Software or later.

4 Installation

The TXA software module is used in an environment where the Dialogic® NaturalAccess™ Development and Signaling Software, the Dialogic® DSI Development Package and the relevant Dialogic® DSI User Parts are installed.

4.1 Dialogic® NaturalAccess™ Software Development Package Installation

Download the NaturalAccess Development Software for the appropriate operating system from

<http://www.nmscommunications.com/DevPlatforms/Support/SWandDoc/default.htm>

Install as per the installation instructions.

4.2 Dialogic® NaturalAccess™ Signaling Software Installation

Download the NaturalAccess Signaling Software package for the appropriate operating system from

http://www.dialogic.com/products/signalingip_ss7components/download/tx-5000.htm

Install as per the installation instructions.

Note: For Solaris (SPARC) installations the Signaling Software for SPARC Solaris(mixed mode) package is required.

4.3 Dialogic® DSI Development Package Installation

Download the DSI SS7 Development Package for the appropriate operating system from

http://www.dialogic.com/products/signalingip_ss7components/download/dsi-interface-protocol-stacks.htm

Install as per the installation instructions.

4.4 Dialogic® DSI Protocol Stacks Installation

Download the required DSI Protocol Stacks for the appropriate operating system from

http://www.dialogic.com/products/signalingip_ss7components/download/dsi-interface-protocol-stacks.htm

Install as per the installation instructions.

4.5 Dialogic® DSI TXA Binary Installation

The standalone TXA binary, which is one of the files distributed and installed as part of the Dialogic® DSI Development Package, should be configured as detailed in section 5.

5 TXA Operation

5.1 Description

The TXA software module provides the interface between the DSI messaging environment (GCT) and the TX Series environment (CPI). For details on the GCT environment refer to Dialogic® Distributed Signaling Interface Components - Software Environment Programmer's Manual – U10SSS.

5.2 Syntax

```
txa -mup=<user_mod_id> -var=<variant> -sio=<sio> [-m=<mod_id> -  
bid=<board_id> -nsap=<nsap> -ch=<channel> -mmgt=<mgmt_mod_id>]
```

5.3 Command Line Options

The TXA software module supports the following command line options:

-mup=<user module ID>

Specifies the GCT module identifier of the associated user part process.

This parameter is mandatory.

-var=<variant>

Specifies the MTP3 protocol variant (and pointcode size) to be used by the user part.

The valid variants are: ITU14, ANSI, ANSI88, JNTT, JTCC, ITU24

This parameter is mandatory.

-sio=<signaling information octet>

The signaling information octet field of the user part.

This parameter is mandatory.

-m=<module ID>

Specifies the unique module identifier assigned to TXA for the GCT inter-process communication (IPC) environment. A message sent to this module ID will be converted into the corresponding TX Series primitive and passed to the TX Series board. The module ID must have a corresponding LOCAL entry in the hosts system.txt file and must not be in use by any other process on the host.

-bid=<board id>

The CP number of the TX Series board as reported by the txcpfcg utility.

-nsap=<network service access point>

The NSAP the TXA instance uses to connect to the network. See the NSAP parameter of the TX Series MTP3 configuration file.

-ch= <CPI channel>

The CPI entity ID TXA uses to communicate with the TX Series board. Application reserved entity IDs are in the range 0x20 to 0x7f and must be unique within the system.

-mmgt= <module ID>

GCT module ID of the management module.

5.4

Example

To interface the DSI SCCP user part (running as module 0x33) to the second TX Series board in a system, using an entity ID of 0x20 using the NATIONAL ANSI MTP3 protocol variant, the following line can be placed in the system.txt file :-

```
FORK_PROCESS ./txa -mup=0x33 -var=ANSI -sio=0x83 -m=0x22 -bid=2  
-nsap=1
```

The user part may then be configured using either using the s7_mgt utility or via messages.