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Dialogic® SS7 Protocols
SCCP Sub-System Monitor (SSM) User Guide

Document Reference U28SSS

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Revision History

Issue	Date	Description
A	03-Oct-01	Initial Issue
1	15-Feb-02	Updated after review
2	31-Jan-03	Branding changed: Septel PCI now SPCI4/SPCI2S and Septel cP now CPM8.
3	01-Oct-07	Changed copyright to Dialogic Corporation. Remove reference to PCCS6, include non-circuit protocol configuration commands in config.txt and add support for SIGTRAN M2PA links.

Contents

1 Introduction

The Dialogic® SCCP Subsystem Monitor (SSM) is an example application for demonstrating the use of the Dialogic® SCCP module. This user guide describes the design, building and usage of this application for developers.

The SSM demonstrates the behavior of the SCCP module by offering simple functionality while showing real examples of the interface to the module. The SSM application can also be used to provide simple verification of system configuration and set-up.

This user guide is intended for users who choose to develop their own applications that will interface with and use the functionality provided by the SCCP module.

1.1 Software requirements

The SSM application requires the following software:

1. Dialogic® SS7 Development Package

2. Dialogic® User Part Development Package

3.   For TDM-based configurations:

    - ss7.dc3 or ss7.dc4 codefile

    - Dialogic® MTP3 and SCCP host binaries, as required

4. For SIGTRAN-based configurations:

    - Dialogic® M2PA, MTP3 and SCCP host binaries, as required

Software can be downloaded from
http://www.dialogic.com/support/helpweb/signaling/software3.htm

2 SSM Application

The monitor itself is configured as a subsystem at a signaling point that will monitor other resources, via the SCCP management messages, which have been configured at either the local or remote signaling points.

This test tool is capable of the following :

- Configure itself as a subsystem (command line optional). On the Dialogic® Signaling Interface Unit (SIU) this must be done in the config.txt file.

- Set up concerned relationships between monitor and local subsystem(LSS), remote subsystem (RSS) and the remote signaling point (RSP)

- Monitor the state of LSS/RSS/RSP

- Check initial status of LSS/RSS/RSP

- Return SCCP version information

- Run in a console or shell window

Point Code 1   **Point Code 2**
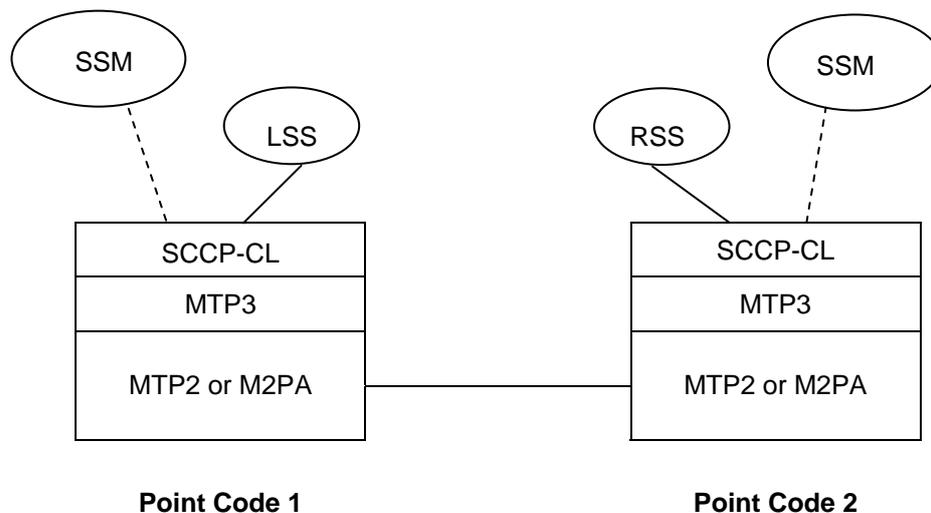
Figure 1.   Necessary SS7 layers when running SSM

SSM needs to run at both ends only if remote subsystems are to be monitored. This is due to the concerned relationships that need to be set up (see section 2.2   Concerned Relationships). The LSS/RSS can be any application, s7_log for example.

2.1 SSM Messages

A number of messages are sent out to SCCP from the SSM. Below is a list of messages sent by SSM and their purpose.

a) GEN_MSG_MOD_IDENT (0x6111)

This message is used to retrieve the SCCP module version and textual description. After this message has been sent, a message is displayed showing the SCCP version information,

    e.g.   SSM: V3.09 SS#7 SCCP

b) SCP_MSG_CNF_SSR (0x7741)

This message will configure the SSM as a local subsystem at the signaling point. SCCP will not send any messages to a resource for which it has not received a configuration message. The displayed message depends on whether the SSM was successfully configured as a subsystem,

    e.g. SSM: Monitor configured as subsystem

If the monitor could not be configured successfully, a message will appear indicating this.

c) SCP_MSG_R_SSR_STATS (0x6753)

One of these messages is sent for each local subsystem (not SSM), remote subsystem and the remote signaling point. It returns the current status of the resource, either 'allowed' or 'prohibited'. For the remote signaling point, the message displayed might be:

    e.g. SSM: Remote pt. code 0x0002 : status allowed

d) SCP_MSG_ADD_CONC (0x7743)

This message is used to set up a concerned relationship. One of these messages is sent for a relationship between the monitor and the local subsystem. A second message is sent for the relationship between the monitor and the remote signaling point. To monitor the remote subsystem two messages are required ((3) + (4) in 0). One message is sent for a relationship between the monitor and the remote subsystem. The other message is a concerned relationship between the local subsystem and the remote signaling point. This last message has no effect if SSM is only run at one end. These concerned relationships can be seen on the following page in 0.

When a concerned relationship message is sent, a message is displayed depending on whether the relationship is successful,

    e.g. SSM: Remote subsystem 0x0c not added as concerned resource – error 0x06.

Information on the error codes can be found in the programmer's manual[1].

2.2 Concerned Relationships

SCCP has functionality that allows a node in a network to be informed of a change in status of another node in the network. In this case, relationships are set up to ensure that the SSM is informed of any status change in the LSS, RSS or RSP.
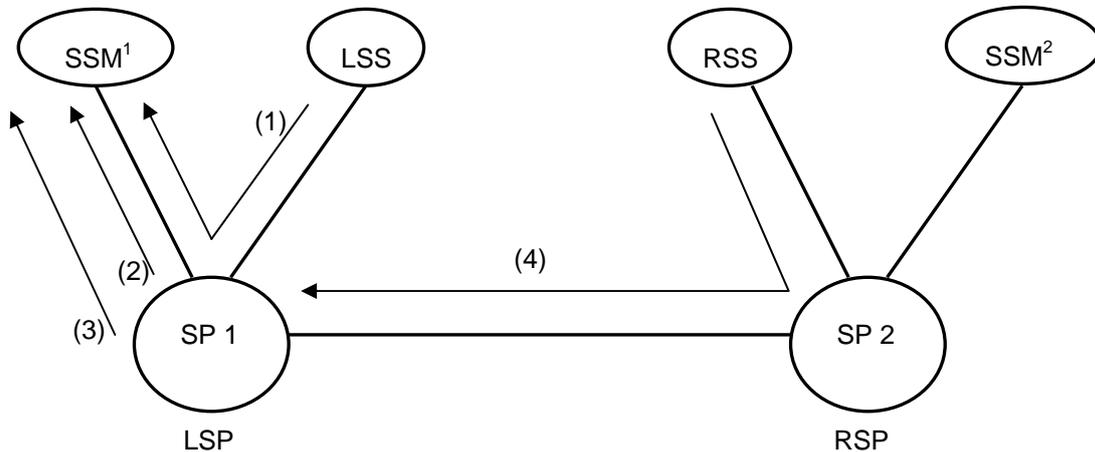
Figure 2.   Example of concerned relationships

Below is a list detailing the concerned relationships shown in 0.
 (1) SSM[1] is concerned about status of LSS

 (2) SSM[1] is concerned about status of RSP

 (3) SSM[1] configures SCCP at SP 1, to pass messages about RSS status up to itself

 (4) SSM[2] configures SCCP at SP 2, to pass messages about LSS to the RSP

As mentioned previously, SSM[1] and SSM[2] will both need to be run if you wish to monitor the RSS. This is mainly due to the way in which relationships (3) and (4) above are intended to work. Concerned relationship (3) will pass information regarding the status of the RSS up to the monitor. But this can only work if SP 2 is configured to pass information about its LSS to SP 1. SP 2 can not be configured in this way by SSM[1]. So if SSM[2] runs also, and both SSM[1] and SSM[2] configure their local signaling point to send messages about the status of its LSS, each signaling point can know the status of their RSS.

If the signaling points at both ends are correctly configured, SSM at both ends should respond to any changes in the status of local/remote subsystems and remote point codes with messages like those below, e.g.

```
SSM: subsystem 0x0c at pt. code 0x0002 – PROHIBITED
SSM: pt. code 0x00000002 – PROHIBITED
```

2.3 Customizing the SSM Application

SSM is example code for development using the Dialogic® SCCP module and as such, a number of simplifications and limitations have been imposed for this purpose.

SSM will only allow one subsystem (apart from itself) to be configured at a signaling point.

SSM is only designed to work between 2 signaling points.

The developer should be aware of the limited nature of the example application when making use of the source code for building their own application.

2.4 SSM source code

The SSM program can be found in the *Dialogic® User Part Development Package*. The following table describes the files required by the SSM application:

File	Notes
ssm_main.c	This file contains the **main()** function. This reads the command line arguments and passes them to **ssm_ent()**.
ssm.c	First, if the –c command line option a call is made to **SSM_config_res()** to configure SSM as a subsystem. SSM then calls **SSM_initialise()** which will retrieve the initial status of point codes and subsystems, set up concerned relationships and retrieve the SCCP module version dependent on the command-line options provided. The main loop of SSM is contained in **SSM_main_process()** which checks for any messages received.

3 Building the SSM applications

Example make-files for the following operating systems are provided and identified by a unique suffix:

Operating system	Suffix
Generic UNIX (Solaris, Linux)	.mak
Windows®	.mnt

A single definitions file (one for each operating system) which contains the definitions relating to the user's own development environment is supplied in the *Dialogic® User Part Development Package.* The definitions files are as follows and the appropriate file should be used depending on the operating system:

makdefs.mak   (Linux)

makdefs_sol.mak   (Solaris)

makdefs.mnt   (Windows®)

For Windows®, a dynamically linked GCT library that allows the application to link to the GCT functions is supplied in the *Dialogic® SS7 Development Package* as follows:

gctlib.dll   (Visual C++® compiler)

For 'UNIX', a GCT shared object is supplied in the *Dialogic® SS7 Development Package*

e.g.   libgctlib.so.1.0.0   (Linux & Solaris)

The source code for the example program should be compiled and linked with the appropriate library for the operating system in use.

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3.1 Host software directory structure

To build the SSM application, the user should first ensure that the required files are copied into the correct directories as follows:

1. Copy either the zip or tar file from the *Dialogic® User Part Development Package* to the *Dialogic® SS7 Development Package* directory and decompress using the appropriate tool. The choice of the zip or tar file is up to the user; both will create the UPD directory structure shown in the table below. The table below shows files required by the SSM program only.

2. The C header files in the INC directory shown in the table below lists the header files required by the SSM program.

The following table lists the directory structure and files required to build the SSM program supplied on the *Dialogic® User Part Development Package*.

Root directory			
Septel			
INC	**UPD**		
scp_inc.h msg.h pack.h ss7_inc.h strtonum.h sysgct.h system.h asciibin.h	**BIN**	**SRC**	
	BACKUP_BINWIN **BACKUP_BINLNX** **BACKUP_BINSOL**	**SSM** ssm.mnt ssm.mak ssm_sol.mak ssm.c ssm_iss.txt ssm_main.c	makdefs.mnt makdefs.mak makdefs.mak makeall.bat makeall makeall_sol

3.2 Building SSM

It is assumed that the UPD is extracted in the *Dialogic® SS7 Development Package* directory i.e. for Windows® C:\Septel as shown above. Similarly, for Linux, a symbolic link should be created it is assumed that the UPD is unpacked and stored within in the DPK directory.

A script is provided in the BIN\SRC directory to build and copy all of the example programs into the UPD/BIN directory. To run this script, change to the BIN\SRC directory and type one of the following commands depending on the operating system:

> makeall   (Linux)
>
> makeall_sol   (Solaris)
>
> makeall.bat   (Windows®)

A pre-built copy of the SSM application, for each operating system, can be located within the backup subdirectories in the BIN directory.

To build the SSM program, change to the SRC\SSM directory and type one of the following commands depending on the operating system:

```
make -f ssm.mak

make -f ssm_sol.mak

nmake /f ssm.mnt
```

4 Configuration

The local and remote ends of the system need to be configured before the SSM application may be run. Example configuration files are provided in the *Dialogic® User Part Development Package* and after installation will be stored in the directories as shown in the following table:

Root	
SSM	**SSM**
"CONFIG"	**"CONFIG"**
config.txt	config.txt
system.txt	system.txt

Example configurations for TDM and SIGTRAN are provided. The configuration files in the SSM directories should be copied to the appropriate node. Refer to **Error! Reference source not found. Error! Reference source not found.** for further information.

4.1 System Configuration

The GCT environment is configured using the gctload program and the system.txt file. The basic board configuration along with the Dialogic® MTP and SCCP modules is achieved using the config.txt file.

4.1.1 SPCI2S, SPCI4 and SS7HD

For TDM-based configurations, example board based configuration files are provided in Appendix A for SSM.

When running SSM on a Windows® host system using an SPCI4 board with the Dialogic® MTP3 and SCCP modules running on the host, the example configuration files provided in **Error! Reference source not found.** may be used without any modification.

Configuration details for other board types are also provided for reference.

4.1.2 SIGTRAN M2PA

It is also possible to run the SSM application from 2 hosts connected in back-to-back with SIGTRAN M2PA links.

4.1.3 SS7G2x

System and protocol information is configured using the management module and commands in the config.txt and system.txt files for the SS7G2x. Further information on this can be obtained from the user manual **Error! Reference source not found.**.

Note: These files are not contained in the User Part Development Package.

4.2 Protocol Configuration

All protocol modules are configured using commands in the config.txt file. The example configuration files given in the appendices will perform the appropriate protocol configuration shown below. If the user wishes to better understand or alter the configuration given, the following sections will be of interest.

Before configuring the protocol modules it is useful to determine the following information relative to each network entity:

- Local point code
- Local sub-system number
- Remote point code and
- Remote sub-system number

4.2.1 SCCP

The local point code and configuration options (e.g. for ITU-T or ANSI operation) are contained in the main SCCP configuration message and should be set to the appropriate value as described in the programmer's manual[1]. In addition, configuration messages are required for the local subsystem, remote point code and remote subsystem.

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5 Running the SSM application

Before running the Dialogic® SSM application, the GCT environment must first be initialized and the signaling links brought into service. This is achieved by running the gctload program and activating the links using the mtpsl utility. Refer to manuals [3], **Error! Reference source not found.** or [3] for details as appropriate.

5.1 SSM Command Line Arguments

The module takes a number of command line arguments, which are summarized below.

Option	Default	Notes
-m	0x0d	SSM module id
-n	0xfc	Subsystem number of SSM
-lss	0xfa	Local subsystem
-rss	0xfb	Remote subsystem
-rsp	0x0003	Remote signaling point
-c		Monitor configures itself as subsystem
-v		Display SCCP version information
-h, -?		List of options

Example:

```
ssm –m0x1d –n0xee –lss0x0c –rsp0x02 –rss0x0a -c

ssm –lss0x0c –rss0x0a –rsp0x02 –m0x1d
```

The first example above would configure itself as a subsystem(-c) and display SCCP version information(-v). It would also set up the concerned relationship between SSM and the local/remote subsystems(-lss/-rss) and remote signaling points(-rsp) indicated in the command line. The second example demonstrates that all parameters are optional, but some if not present have the assumed values as shown above.

6 References

[1] U05SSS, Dialogic® SCCP Programmer's Manual

[2] U10SSS, Dialogic® Software Environment Programmer's Manual

[3] 05-2302, Dialogic® SS7G2x SIU Mode User Manual

[4] 05-2063, Dialogic® SS7HD Programmer's Manual

[5] U03HSP, Dialogic® SS7 Programmer's Manual for SPCI2S, SPCI4 and CPM8

[6] U04STN, Dialogic® Programmer's Manual for Sigtran Host Software

Updates to the documentation are available on the Dialogic web site at
http://www.dialogic.com/support/helpweb/signaling/default.htm

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7 Abbreviations

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The following lists acronyms alphabetically used in this user guide.

LSS   Local subsystem

PCI   Peripheral Component Interconnect

RSP   Remote signaling point

RSS   Remote subsystem

SCCP   Signaling Connection Control Part

SIU   Signaling Interface Unit

SP   Signaling point

SSM   SCCP Subsystem Monitor

Appendix A - Example SSM Configuration Files

This section provides example configuration files for use with the Dialogic® SSM application on a Windows® host system for Dialogic® SPCI4 boards. The Dialogic® SCCP module is running on the board. SSM is running as module ID 0x0d.

Before configuring the protocol modules, it is useful to determine information such as the local point code and remote point code relative to each network entity. For this example configuration, the local point code is 1 and the remote point code is 2. In the provided example configuration files, SSM is running on the local point code 1 and remote point code 2 (Figure 3).

Example configuration

Operating system:	Windows®
Board type:	SPCI4
Local point code (SSM):	1
Remote point code (SSM):	2
SSM module ID (point code 1):	0x0d
SSM module ID (point code 2):	0x0d
SCCP module running on board or on host:	Running on board

SSM
Point Code 1
subsystem 0x0c

SSM
Point Code 2
subsystem 0xa
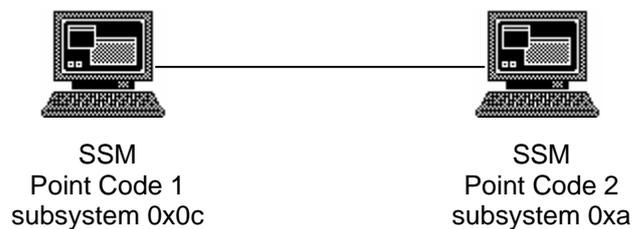
Figure 3.   Example configuration

A.1   system.txt

This section provides two example system.txt files with SCCP running on the board.
The following example system.txt files are for point codes 1 and 2. All comments are denoted by '*'.

A.1.1   system.txt for point code 1

```
*************************************************************************
* Example system.txt.
* Edit this file to reflect your configuration.
*************************************************************************
*
* Essential modules running on the host:
*
LOCAL           0x20             * ssd - Board Interface task
LOCAL           0x00             * Timer Task
*
* Optional modules running on the host:
*
LOCAL           0xef             * s7_log - logs messages
LOCAL           0xcf             * s7_mgt - Management/config task
LOCAL           0x33             * SCCP module
LOCAL           0x0d             * sub-system monitor
*
* Modules running on the board (all redirected via ssd):
*
REDIRECT        0x33    0x20     * SCCP module
REDIRECT        0x22    0x20     * MTP3 module
REDIRECT        0x71    0x20     * MTP2 module
REDIRECT        0x10    0x20     * MVIP/SCbus/Clocking control module
REDIRECT        0x8e    0x20     * On-board management task
*
* Redirection of status:
*
REDIRECT        0xdf    0xef     * LIU/MTP2 status messages to s7_log
REDIRECT        0x9e    0xef
*
DEFAULT_MODULE  0xef
*
* Now start-up all local tasks:
FORK_PROCESS    ..\..\..\..\ssds.exe
FORK_PROCESS    ..\..\..\..\tim_nt.exe
FORK_PROCESS    ..\..\..\..\tick_nt.exe
FORK_PROCESS    ..\..\..\..\s7_mgt.exe -d
FORK_PROCESS    ..\..\..\..\s7_log.exe -fs7log.txt
*
```

A.1.2   system.txt for point code 2

```
*************************************************************************
* Example system.txt.
* Edit this file to reflect your configuration.
*************************************************************************
*
* Essential modules running on the host:
*
LOCAL           0x20            * ssd - Board Interface task
LOCAL           0x00            * Timer Task
*
* Optional modules running on the host:
*
LOCAL           0xef            * s7_log - logs messages
LOCAL           0xcf            * s7_mgt - Management/config task
LOCAL           0x33            * SCCP module
LOCAL           0x0d            * sub-system monitor
*
* Modules running on the board (all redirected via ssd):
*
REDIRECT        0x33    0x20    * SCCP module
REDIRECT        0x10    0x20    * MVIP/SCbus/Clocking control module
REDIRECT        0x8e    0x20    * On-board management task
REDIRECT        0x22    0x20    * MTP3 module
REDIRECT        0x71    0x20    * MTP2 module
*
* Redirection of status:
*
REDIRECT        0xdf    0xef    * LIU/MTP2 status messages to s7_log
REDIRECT        0x9e    0xef
*
DEFAULT_MODULE  0xef
*
* Now start-up all local tasks:
FORK_PROCESS    ..\..\..\..\ssds.exe
FORK_PROCESS    ..\..\..\..\tim_nt.exe
FORK_PROCESS    ..\..\..\..\tick_nt.exe
FORK_PROCESS    ..\..\..\..\s7_mgt.exe -d
FORK_PROCESS    ..\..\..\..\s7_log.exe -fs7log.txt
*
```

A.1.3 Using different operating systems and board configurations

The following subsections provide information regarding the system.txt file if using different operating systems or board-based configurations.

A.1.2 Running SSM with SS7HD

If using SSHD, the following lines:

```
REDIRECT        0x71    0x20    * MTP2 module

FORK_PROCESS    SSDS.EXE -d
```

should be replaced by:
```
REDIRECT        0x81    0x20    * MTP2 module_id for SP0
REDIRECT        0x91    0x20    * MTP2 module_id for SP1
REDIRECT        0xe1    0x20    * MTP2 module_id for SP2
REDIRECT        0xf1    0x20    * MTP2 module_id for SP3

FORK_PROCESS    SSDH.EXE -d
```
Refer **Error! Reference source not found.** for further information.

A.1.3.2 Running SSM with SS7G2x

If using the SIU, additional commands required by the SIU will need to be included. Therefore, the example system.txt provided in this appendix should not be used. Refer to [3] for further information.

A.1.3.3 Running SSM with host binary

If using a host binary so that the SCCP module is run on the host instead of the board, start up the host binary with the FORK_PROCESS command, a LOCAL declaration should be added to show that the module is running locally on the host and the corresponding REDIRECT command (which redirects messages for that module to the board) should be removed.

Refer to [3], **Error! Reference source not found.** and [3] as appropriate.

A.1.3.4 Running SSM with other operating systems

If using operating systems other than Windows®, the names of some of the executable files used in the FORK_PROCESS commands need to be changed. Refer to **Error! Reference source not found.** and [3] as appropriate.

A.1.2.1 Running SSM with SIGTRAN M2PA

Add the following to 'Modules running on the host':
```
LOCAL           0xc2            * MBM - Management task
LOCAL           0xd0            * SCTPD module
```

```
LOCAL               0xd1                * SCTP module
LOCAL               0xc1                * M2PA module
```

Make sure these modules are started using the FORK_PROCESS commands as follows::
```
FORK_PROCESS      ..\..\..\..\sctpd.exe
FORK_PROCESS      ..\..\..\..\sctp.exe
FORK_PROCESS      ..\..\..\..\m2pa_nt.exe -t
FORK_PROCESS      ..\..\..\..\mbm.exe -d
```

Refer to manuals [6] for further information as appropriate.

A.2 config.txt

This section provides two example config.txt files for a PCCS6 board running under Windows® with SCCP running on the board showing how SCCP can be configured for use.

All comments are denoted by '*'.

Using the two example config.txt files (one at each end of the link) will allow the monitoring of the status of local and remote subsystems and signaling points to be demonstrated. If connecting to other equipment, the various parameters in the file need to be examined to determine if they are compatible with the configuration at the other end of the link, for example:

- point codes (OPC, DPC)
- signaling timeslot

The example files provided in this appendix should not be used for the SIU (refer to [3] for further information).

A.2.1 config.txt for point code 1

```
**************************************************************************
* This file needs to be modified to suit individual circumstances.
* Refer to the relevant Programmer's Manuals for further details.
*
**************************************************************************
*
* For SPCI2S, SPCI4S and CPM8 / PCI boards:
* SEPTELPCI_BOARD <board_id> <flags> <code_file>
SEPTELPCI_BOARD  0   0x0003   ss7.dc3 SCCP
*
LIU_CONFIG 0 0 5 1 1 1
*
* MTP Parameters:
* MTP_CONFIG <reserved> <reserved> <options>
MTP_CONFIG   0    0    0x0000
*
* Define linksets:
* MTP_LINKSET <linkset_id> <adjacent_spc> <num_links> <flags> <local_spc>
<ssf>
MTP_LINKSET   0    0x2    3    0x0000 0x1 0x8
*
* Define signaling links:
* MTP_LINK <link_id> <linkset_id> <link_ref> <slc> <board_id> <blink>
<stream> <timeslot> <flags>
MTP_LINK   0   0   0   0   0   0    0x10    0x01    0x06
*
* Define a route for each remote signaling point:
* MTP_ROUTE <dpc> <linkset_id> <user_part_mask>
MTP_ROUTE   2    0    0x0008
*
* Define any user provided Layer 4 protocol:
* MTP_USER_PART <service_ind> <module_id>
MTP_USER_PART   0x03    0x33
*
MTP_TRACE 1 1 0
```

A.2.2 config.txt for point code 2

```
*************************************************************************
* This file needs to be modified to suit individual circumstances.
* Refer to the relevant Programmer's Manuals for further details.
*
*************************************************************************
*
* For SPCI2S, SPCI4S and CPM8 / PCI boards:
* SEPTELPCI_BOARD <board_id> <flags> <code_file>
SEPTELPCI_BOARD  0  0x0002  ss7.dc3 SCCP
*
LIU_CONFIG 0 0 5 1 1 1
*
* MTP Parameters:
* MTP_CONFIG <reserved> <reserved> <options>
MTP_CONFIG   0   0    0x0000
*
* Define linksets:
* MTP_LINKSET <linkset_id> <adjacent_spc> <num_links> <flags> <local_spc>
<ssf>
MTP_LINKSET   0    0x1   3    0x0000 0x2 0x8
*
* Define signaling links:
* MTP_LINK <link_id> <linkset_id> <link_ref> <slc> <board_id> <blink>
<stream> <timeslot> <flags>
MTP_LINK    0    0    0    0    0    0    0x10   0x01   0x06
*
* Define a route for each remote signaling point:
* MTP_ROUTE <dpc> <linkset_id> <user_part_mask>
MTP_ROUTE    1    0    0x0008
*
* Define any user provided Layer 4 protocol:
* MTP_USER_PART <service_ind> <module_id>
MTP_USER_PART    0x03    0x33
*
MTP_TRACE 1 1 0
```

A.2.3 Using different operating systems and board configurations

The following subsections provide information regarding the config.txt file if using different operating systems or board-based configurations.

A.2.3.1 Running SSM with SS7HDP

If using SS7HDP boards, the SEPTELPCI_BOARD command should be replaced with the following:

```
SS7_BOARD  0 SS7HDP 0x0003  ss7.dc4  MTP2
```

Refer to [3] for further information.

A.2.3.2 Running SSM with host binary

When using a SCCP host binary so that the SCCP module is run on the host instead of the board:

- For SPCI2S, SPCI4 and CPM8:

    the <run_mode> field in the SEPTELPCI_BOARD command should be set to MTP

Refer to **Error! Reference source not found.**and [3] as appropriate.

A.2.3.3 Running SSM with the SIU

If using the SIU, additional commands required by the SIU will need to be included. Therefore, the example config.txt provided in this appendix should not be used.

Refer to [3] for further information.

A.2.3.4 Running SSM with other operating systems

There are no additional commands specific to various operating systems.

Refer to **Error! Reference source not found.** and [3] as appropriate.

A.2.3.5 Running CTU with SIGTRAN M2PA

The board configuration commands (`SEPTELPCI_BOARD` and `LIU_CONFIG`) should be removed and replaced with the CNSYS and SNSLI commands.

Refer to [6] as appropriate.

A.3   SCCP Configuration files

This section provides two files, one each for SSM running at point codes 1 and 2. These files will configure the SCCP protocol layer for the SPCI2S, SPCI4 and CPM8.

If SCCP is to be run on the host then the configuration message (0x7740) needs to have the value for the options field changed from 0x0323 to 0x0322 (refer to [1] for more information).

The subsystem at point code 1 is 0xc. At point code 2 the subsystem number is 0xa.

These messages must be sent before any messages from SSM will be acknowledged by SCCP.

This file should not be used on the SIU. See [3] for more information.

A.3.1 set_pc1.ms7

```
***************************************************************
*
*     SCCP Configuration.
*
***************************************************************
*
*       Issue configuration message to the SCCP module:
*
*                                       --maint_id
*                            --mod_id              ----SMB flags
*                     ----options --------pc    --SMB id
*              --sio      --mgmt_id       --SCCP inst
*          --ver    --mtp_id        ----max_sif
M-t7740-i0000-fef-d33-r8000-
p018303233322efef00000001011000ef00000000000000000000000000000000000000000000000000000000000000000
00000000000000000000000000000
*
*
*       Configure Local sub-systems
*                            --mult_ind
*                            --mod_id        -----------------------reserved--------------
---------------
*                            --type         --ssn
*                            --ver    --------spc
M-t7741-i0000-fef-d33-r8000-
p00030001000000000c0000000000000000000000000000000000000000000000000000000000000000
*
*
*       Configure Remote SP's
*                            --mult_ind
*                            --mod_id        -----------------------reserved--------------
---------------
*                            --type         --ssn
*                            --ver    --------spc
M-t7741-i0000-fef-d33-r8000-
p000100000000000020000000000000000000000000000000000000000000000000000000000000000000
*
*       Configure Remote sub-systems
*                            --mult_ind
*                            --mod_id        -----------------------reserved--------------
---------------
*                            --type         --ssn
*                            --ver    --------spc
M-t7741-i0000-fef-d33-r8000-
p00020000000000020a0000000000000000000000000000000000000000000000000000000000000000
*
*
*       Send UIS, ssn = 0xc :
*                            --SSA
M-tc744-i000c-fef-d33-r8000-p0101000000000000
*
```

A.3.2 set_pc2.ms7

```
****************************************************************
*
*     SCCP Configuration.
*
****************************************************************
*
*       Issue configuration message to the SCCP module:
*
*                                 --maint_id
*                          --mod_id              ----SMB flags
*                    ----options --------pc    --SMB id
*                 --sio      --mgmt_id        --SCCP inst
*              --ver    --mtp_id       ----max_sif
M-t7740-i0000-fef-d33-r8000-
p018303233322efef00000002011000ef0000000000000000000000000000000000000000000000000000000000000000
00000000000000000000000000000
*
*
*       Configure Local sub-systems
*                            --mult_ind
*                        --mod_id      ------------------------reserved--------------
---------------
*                         --type        --ssn
*                      --ver   --------spc
M-t7741-i0000-fef-d33-r8000-
p00030001000000000a000000000000000000000000000000000000000000000000000000000000000
*
*
*       Configure Remote SP's
*                            --mult_ind
*                        --mod_id      ------------------------reserved--------------
---------------
*                         --type        --ssn
*                      --ver   --------spc
M-t7741-i0000-fef-d33-r8000-
p000100000000000010000000000000000000000000000000000000000000000000000000000000000
*
*       Configure Remote sub-systems
*                            --mult_ind
*                        --mod_id      ------------------------reserved-------------
---------------
*                         --type        --ssn
*                      --ver   --------spc
M-t7741-i0000-fef-d33-r8000-
p000200000000000010c000000000000000000000000000000000000000000000000000000000000000
*
*
*       Send UIS, ssn = 0xa :
*                          --SSA
*
M-tc744-i000a-fef-d33-r8000-p0101000000000000
*
```

Appendix B - Sample Output

The following is a sample output from the Dialogic® SSM application at point code 1 and 2. SSM at both point codes has a module id of 0x0d.

SSM at point code 1 was started using :

> ssm -m0x1d -n0xee -lss0x0c -rsp0x2 -rss0xa -v -c

SSM point code 1 example output :

```
SSM - SCCP Subsystem Monitor  (C) Dialogic Corporation 1991-2006. All Rights Reserved.
=====================================================================================
SSM: Trying to configure monitor as subsystem
SSM: Monitor configured as subsystem
SSM: I0000 M tc744 i00ee f1d d33 s00 p0101000000000000
SSM: I0000 M t8744 i00ee f1d d1d s00 p0101000000000000
SSM: Remote point code 0x00000002 : status ALLOWED
SSM: Remote subsystem 0x0a at PC 0x00000002 : status ALLOWED
SSM: Local subsystem 0x0c at local pt. code : status ALLOWED
SSM: SSM is concerned about local subsystem 0x0c
SSM: SSM is concerned about remote subsystem 0x0a
SSM: SSM is concerned about remote pt. code 0x00000002
SSM: Remote pt. code 0x00000002 is concerned about local subsystem 0x0c
SSM: V3.07  - SS#7 SCCP
SSM: subsystem 0x0a at pt. code 0x00000002 - PROHIBITED
SSM: pt. code 0x00000002 - PROHIBITED
SSM: pt. code 0x00000002 - ALLOWED
SSM: subsystem 0x0a at pt. code 0x00000002 - ALLOWED
SSM: subsystem 0x0a at pt. code 0x00000002 - PROHIBITED
SSM: pt. code 0x00000002 - PROHIBITED
SSM: pt. code 0x00000002 - ALLOWED
SSM: subsystem 0x0a at pt. code 0x00000002 - ALLOWED
```

SSM at point code 2 was started using :

> ssm -m0x1d -n0xee -lss0x0a -rsp0x0 -rss0xc -v -c

SSM point code 2 example output

```
SSM - SCCP Subsystem Monitor  (C) Dialogic Corporation 1991-2006. All Rights Reserved.
=====================================================================================
SSM: Trying to configure monitor as subsystem
SSM: Monitor configured as subsystem
SSM: I0000 M tc744 i00ee f1d d33 s00 p0101000000000000
SSM: I0000 M t8744 i00ee f33 d1d s00 p0101000000000000
SSM: Remote point code 0x00000000 : status ALLOWED
SSM: Remote subsystem 0x0c at PC 0x00000000 : status PROHIBITED
SSM: Local subsystem 0x0a at local pt. code : status ALLOWED
SSM: SSM is concerned about local subsystem 0x0a
SSM: SSM is concerned about remote subsystem 0x0c
SSM: SSM is concerned about remote pt. code 0x00000000
SSM: Remote pt. code 0x00000000 is concerned about local subsystem 0x0a
SSM: V3.10  - SS#7 SCCP
SSM: subsystem 0x0c at pt. code 0x00000000 - ALLOWED
SSM: subsystem 0x0c at pt. code 0x00000000 - PROHIBITED
SSM: pt. code 0x00000000 - PROHIBITED
SSM: pt. code 0x00000000 - ALLOWED
SSM: subsystem 0x0c at pt. code 0x00000000 - ALLOWED
SSM: subsystem 0x0c at pt. code 0x00000000 - PROHIBITED
SSM: pt. code 0x00000000 - PROHIBITED
SSM: pt. code 0x00000000 - ALLOWED
SSM: subsystem 0x0c at pt. code 0x00000000 - ALLOWED
   010000
```