



Alcatel-Lucent 7705

SERVICE AGGREGATION ROUTER | RELEASE 4.0
SERIAL DATA INTERFACE CARD INSTALLATION GUIDE

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Preface

About This Guide

This guide provides site preparation recommendations and step-by-step procedures to install, remove, and replace a 12-port Serial Data Interface card. After the hardware installation process is completed, refer to the [List of Technical Publications](#) for details on the boot process, software configuration, and Command Line Interface (CLI) information to configure system and network parameters.

The 12-port Serial Data Interface card has four 68-pin connectors on its faceplate. Each connector supports three data ports. The connectors are labeled Ports 1-3, 4-6, 7-9, and 10-12. The Serial Data Interface card data ports operate in access mode only and can be configured for a V.35 interface, RS-232 (also known as EIA/TIA-232) interface, or X.21 interface.

The Serial Data Interface card is connected to a V.35, RS-232, or X.21 distribution panel using a 2 m (6.5 ft) cable, or to a customer-supplied distribution panel using a 10 m (32.8 ft) open-ended cable.

List of Technical Publications

The 7705 SAR OS documentation set is composed of the following guides:

- 7705 SAR OS Basic System Configuration Guide
This guide describes basic system configurations and operations.
- 7705 SAR OS System Management Guide
This guide describes system security and access configurations as well as event logging and accounting logs.
- 7705 SAR OS Interface Configuration Guide
This guide describes card and port provisioning.
- 7705 SAR OS Router Configuration Guide
This guide describes logical IP routing interfaces, IP-based filtering, and routing policies.

- **7705 SAR OS MPLS Guide**
This guide describes how to configure Multiprotocol Label Switching (MPLS), Resource Reservation Protocol for Traffic Engineering (RSVP-TE), and Label Distribution Protocol (LDP).
 - **7705 SAR OS Services Guide**
This guide describes how to configure service parameters such as service access points (SAPs), service destination points (SDPs), customer information, and user services.
 - **7705 SAR OS Quality of Service Guide**
This guide describes how to configure Quality of Service (QoS) policy management.
 - **7705 SAR OS Routing Protocols Guide**
This guide provides an overview of dynamic routing concepts and describes how to configure them.
 - **7705 SAR OS OAM and Diagnostics Guide**
This guide provides information on Operations, Administration and Maintenance (OAM) tools.
-

Warnings and Notes

Observe the warnings and notes to avoid injury or router damage during installation and maintenance. Follow the safety procedures and guidelines when working with and near electrical equipment. Warning statements and notes are provided in each chapter.





Audience

This guide is intended for network installers and system administrators who are responsible for installing, configuring, or maintaining networks. This guide assumes you are familiar with electronic and networking technologies.

Information Symbols

Table 1 describes symbols contained in this guide.

Table 1: Information Symbols

Symbol	Meaning	Description
	Danger	This symbol warns that improper handling and installation could result in bodily injury. Before you begin work on this equipment, be aware of hazards involving electrical circuitry, be aware of your networking environments, and instigate accident prevention procedures.
	Warning	This symbol warns that improper handling and installation could result in equipment damage or loss of data.
	Caution	This symbol warns that improper handling may reduce your component or system performance.
	Note	This symbol provides additional operational information.

Multiple PDF File Search

You can use Adobe Reader, Release 6.0 or later, to search multiple PDF files for a term. Adobe Reader displays the results in a display panel. The results are grouped by PDF file. You can expand the entry for each file.



Note: The PDF files in which you search must be in the same folder.

To search multiple PDF files for a term:

- Step 1.** Open Adobe Reader.
- Step 2.** Choose Edit – Search from the Adobe Reader main menu. The Search panel appears.
- Step 3.** Enter the term to search for.
- Step 4.** Select the All PDF Documents in radio button.
- Step 5.** Choose the folder in which to search using the drop-down menu.

Step 6. Select the following criteria if required:

- Whole words only
- Case-Sensitive
- Include Bookmarks
- Include Comments

Step 7. Click on the Search button.

Adobe Reader displays the search results. You can expand the entries for each file by clicking on the + symbol.

Step 8. Click on a search result to go directly to that location in the selected file.

Technical Support

If you purchased a service agreement for your 7705 SAR-8 and related products from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance. If you purchased an Alcatel-Lucent service agreement, check this link for instructions to contact Support personnel:

Web: <http://support.alcatel-lucent.com>

Installing an Adapter Card

In This Chapter

This chapter provides information about installing and removing a 12-port Serial Data Interface card in the 7705 SAR-8.

This chapter provides information on the following topics:

- [Power Consumption on page 14](#)
- [Provisioning Requirements on page 15](#)
- [Provisioning an Adapter Card on page 16](#)
 - [Configuration Example on page 16](#)
- [Removing an Adapter Card Configuration on page 19](#)
- [Installation Procedures on page 20](#)
 - [Warnings and Notes on page 20](#)
 - [Installing an Adapter Card on page 21](#)
 - [Removing and Replacing an Adapter Card on page 23](#)

Power Consumption

Table 2 lists the power consumption for the 12-port Serial Data Interface card.

Table 2: Power Consumption

Description	Typical Power (W)	Maximum Power (W)
12-port Serial Data Interface card	21.5 W	25 W

Refer to “Power Consumption” in the 7705 SAR-8 Installation Guide for more information on the power consumption of other hardware.

Provisioning Requirements

To configure cards and ports, you must be able to access the 7705 SAR-8 by console or Telnet connection. Refer to the 7705 SAR-8 Installation Guide for information and instructions on console and Telnet connections.

The CSM does not require provisioning. However, the IOM, which is an integral part of the CSM software module, must be activated before any adapter cards and port parameters can be provisioned and configured. The IOM is activated using the `card` and `card-type` CLI commands to specify its slot number and card type. Adapter cards must be provisioned before their ports can be configured.



Notes:

- IOMs are specified using the `card` and `card-type` commands (items 1 and 2 in the list below).
- Adapter cards are provisioned and configured using the `mda` and `mda-type` commands (items 3 and 4 in the list below).

Provision components in the following order:

1. Card slot number (use the `card` command)
 2. Card type
 3. Adapter card slot number (use the `mda` command)
 4. Adapter card type
 5. Ports
-

Provisioning an Adapter Card

After the IOM has been activated on the CSM (Steps 1 and 2 below), continue in the `config` context with the following CLI commands to provision the adapter card. The steps below provision two 12-port Serial Data Interface cards, one in slot 1 and another in slot 2. The 7705 SAR-8 chassis supports a maximum of six adapter cards.



Note: The 7705 SAR-8 supports up to six adapter cards, in any combination that does not exceed the maximum; however, for a network application, at least one of the installed cards must be a network-capable adapter card.

Command Syntax	Example
Step 1. <code>card slot-number</code>	<code>card 1</code>
Step 2. <code>card-type card-type</code>	<code>card-type iom-sar</code>
Note: The <i>slot-number</i> is always 1 and the <i>card-type</i> is always <code>iom-sar</code> .	
Step 3. <code>mda mda-number</code>	<code>mda 1</code>
Step 4. <code>mda-type mda-type</code>	<code>mda-type a12-sdi</code>
Step 5. <code>exit</code>	<code>exit</code>

To provision an additional adapter card, continue the configuration process with Step 6:

Step 6. <code>mda mda-number</code>	<code>mda 2</code>
Step 7. <code>mda-type mda-type</code>	<code>mda-type a12-sdi</code>
Step 8. <code>exit</code>	<code>exit</code>

Configuration Example

The following example shows the `card`, `card-type`, `mda` and `mda-type` commands to specify the IOM as an `iom-sar` type and provision 12-port Serial Data Interface cards in slots 1 and 2.

```
ALU-1>config# card 1
ALU-1>config>card# card-type iom-sar
ALU-1>config>card# mda 1
ALU-1>config>card>mda# mda-type a12-sdi
ALU-1>config>card>mda# exit
ALU-1>config>card# mda 2
ALU-1>config>card>mda# mda-type a12-sdi
ALU-1>config>card>mda# exit
```


Sample Output

Use the `config>info` command to display card configuration information:

```

ALU-1>config# info
...
#-----
echo "Card Configuration"
#-----
    card 1
        card-type iom-sar
        mda 1
            mda-type a12-sdi
        exit
        mda 2
            mda-type a12-sdi
        exit
        mda 3
            mda-type a4-oc3
        exit
        mda 4
            mda-type a16-chds1
        exit
        mda 5
            mda-type a8-eth
        exit
        mda 6
            mda-type a2-choc3
        exit
    exit
#-----
...

```

Use the `show card state` command to display administrative and operational states for all cards:

```

ALU-1# show card state

=====
Card State
=====
Slot/  Provisioned  Equipped  Admin Operational  Num  Num  Comments
Id     Type         Type      State  State           Ports MDA
-----
1      iom-sar        iom-sar   up     up              6
1/1    a12-sdi        up        up     provisioned     12
1/2    a12-sdi        up        up     provisioned     12
1/3    a4-oc3         up        up     provisioned     4
1/4    a16-chds1     up        up     provisioned     16
1/5    a8-eth        up        up     provisioned     8
1/6    a2-choc3      up        up     provisioned     2
A      csm-1g        csm-1g   up     up              Active
B      csm-1g        up        down   Standby
=====
ALU-1#

```

Use the `show mda` command to display provisioned adapter card information:

```
ALU-1# show mda
```

```
=====
MDA Summary
=====
Slot  Mda      Provisioned      Equipped      Admin      Operational
      Mda      Mda-type         Mda-type      State      State
-----
1      1      a12-sdi          up            up          provisioned
      2      a12-sdi          up            up          provisioned
      3      a4-oc3          up            up          provisioned
      4      a16-chds1       up            up          provisioned
      5      a8-eth          up            up          provisioned
      6      a2-choc3       up            up          provisioned
=====
ALU-1#
```

Removing an Adapter Card Configuration

If you remove an adapter card and will not be replacing it, or will be replacing it with a card of a different type, you must first remove the associated configuration, such as SAPs, SDPs, and port connections, prior to removing the installed card. If you will be replacing it with a card of the same type, you do not need to remove the associated configuration.

Refer to the 7705 SAR OS Interface Configuration Guide for details on configuring cards and ports.

In the example below, a 12-port Serial Data Interface card in slot 1 is being removed. In this example, only the port configuration must be removed.

Command Syntax	Example
Step 1. <code>port port-id</code>	<code>port 1/1/5</code>
Step 2. <code>shutdown</code>	<code>shutdown</code>



Note: The `port>shutdown` command must be repeated for all enabled ports on the adapter card.

Step 3. <code>exit</code>	<code>exit</code>
Step 4. <code>card slot-number</code>	<code>card 1</code>
Step 5. <code>mda mda-slot</code>	<code>mda 1</code>
Step 6. <code>shutdown</code>	<code>shutdown</code>
Step 7. <code>exit</code>	<code>exit</code>
Step 8. <code>no mda mda-slot</code>	<code>no mda 1</code>

You can now remove the installed card and replace it if required; see [Removing and Replacing an Adapter Card](#). If you are simply removing the card, insert a filler plate in the empty slot. If you are replacing the card with a different type, provision the new card before installing it. If you are replacing the card with the same type, you do not need to provision it.

Installation Procedures

Warnings and Notes



Danger: Always assume that fiber-optic cables are connected to a light source.



Warnings:

- Electrostatic discharge (ESD) damage can occur if adapter cards are mishandled. Always wear an ESD-preventive wrist or ankle strap and always connect an ESD strap to a nearby ground point that is connected to the site grounding point when working with an adapter card. Typical ground points include the ground stud on the 7705 SAR-8 mounting bracket, or a properly grounded rack or work bench.
- Always place components on an anti-static surface.
- Do not power up a 7705 SAR-8 before verifying that all common equipment (chassis, power, cooling, and grounding) is connected properly.
- The Fan module and all cards in the 7705 SAR-8 chassis must have the same voltage type.
- Filler plates are required in all empty slots to prevent excess dust accumulation and to help control airflow and electromagnetic interference.
- Use only approved small form-factor pluggable (SFP) fiber-optic devices in adapter card ports.
- To comply with the GR-1089-CORE requirement R4-9 [31] standard for electromagnetic compatibility and safety, all intra-building ports are specified for use with shielded and grounded cables at both ends.
- The intra-building port(s) of the equipment or sub-assembly is suitable for connection to intra-building or unexposed wiring or cabling only. The intra-building port(s) of the equipment or sub-assembly must not be metalically connected to interfaces that connect to the Outside Plant (OSP) or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection in order to connect these interfaces metalically to OSP wiring.



Notes:

- Ports cannot be configured until the adapter card is provisioned.
- Services cannot be provisioned until the ports are configured.
- Adapter card slot numbers are MDA 1 through MDA 6.

Installing an Adapter Card

Figure 1 identifies the location of the MDA slots. Figure 2 illustrates the installation of an adapter card. Table 3 identifies the installation features. Ejector levers help install and remove the adapter card; captive screws secure the card in place.

Figure 1: 7705 SAR-8 Slot Identification

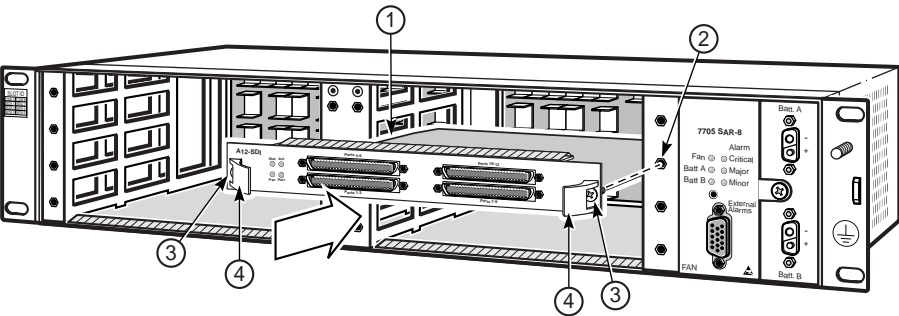
CSM A	CSM B	FAN	Batt A
MDA 1	MDA 2		Batt B
MDA 3	MDA 4		
MDA 5	MDA 6		

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The 12-port Serial Data Interface card has four 68-pin mini-Champ connectors on its faceplate. These connectors are cabled to a V.35, RS-232, or X.21 distribution panel using a 2 m (6.5 ft) cable, or to a customer-supplied distribution panel using a 10 m (32.8 ft) open-ended cable. See [Serial Data Interface Card Connectors](#).

The 12-port Serial Data Interface card has four LEDs on its faceplate to display card and port status. See [LED Descriptions](#).

Figure 2: Installing an Adapter Card



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Table 3: Adapter Card Installation and Removal Features

Key	Description
1	Slot guide
2	Threaded receptacle
3	Captive screw
4	Ejector lever

Tools required:

- torque driver for Phillips screws

To install an adapter card:

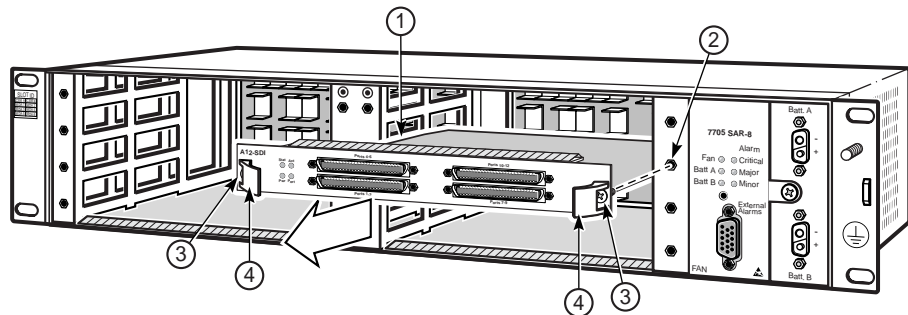
- Step 1.** Remove the adapter card from the packaging and place on an anti-static work surface. Avoid touching the card components and connector pins.
- Step 2.** Insert the adapter card into an empty MDA slot.
With the ejector levers pressed inward, hold the adapter card by the levers and align the adapter card with the slot guides and the captive screws with the threaded receptacles (see [Figure 2](#)).
- Step 3.** Press the adapter card firmly into the slot. Make sure that the card connectors are seated and that the captive screws are engaged in the threaded receptacle.
- Step 4.** Tighten the captive screws to secure the card. Do not over-tighten. The recommended torque is 3 to 4 lbf-in (0.34 to 0.45 N·m).
- Step 5.** Check the Power LED on the adapter card faceplate. If the adapter card is properly inserted and the 7705 SAR-8 has valid power, the Power LED is lit blue. See [LED Descriptions](#) for a description of LED activity.
- Step 6.** Connect the distribution panel cables. See [Serial Data Interface Card Connectors](#) for cable descriptions and pinout assignments.

Removing and Replacing an Adapter Card

Before you remove and replace an adapter card, see [Removing an Adapter Card Configuration](#).

Figure 3 illustrates removing an adapter card. Table 3 identifies the removal features.

Figure 3: Removing an Adapter Card



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Tools required:

- Phillips screwdriver
- torque driver for Phillips screws

To remove and replace an adapter card:

Step 1. Disconnect all cable connections to the adapter card.

Step 2. Use a Phillips screwdriver to loosen the captive screws.



Caution: Do not try to remove the adapter card from the slot before the captive screws are loosened.

Step 3. Simultaneously rotate both ejector levers outward to release the adapter card connectors from the backplane.

Step 4. Hold the adapter card by the ejector levers and pull the card out of the slot.

Step 5. Place the adapter card on an anti-static surface.

Step 6. Install a replacement adapter card in the slot or cover the slot with a filler plate.

Step 7. Tighten the captive screws to secure the card or filler plate. Do not over-tighten. The recommended torque is 3 to 4 lbf-in (0.34 to 0.45 N·m).

Step 8. Check the Power LED on the adapter card faceplate. If the adapter card is properly inserted and the 7705 SAR-8 has valid power, the Power LED is lit blue. See [LED Descriptions](#) for a description of LED activity.

Step 9. If you replaced the adapter card, reconnect all cable connections to the card.

Serial Data Interface Card Connectors

In This Chapter

This chapter provides information about the cables and connector panels used with the 12-port Serial Data Interface card.

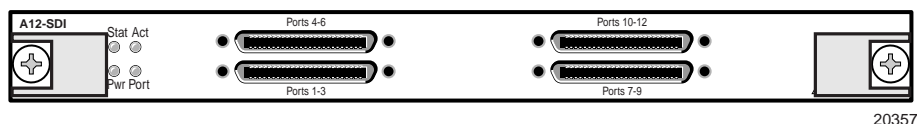
This chapter provides information on the following topics:

- [Serial Data Interface Card Connectors on page 26](#)
 - [Connector Pinouts on page 28](#)
 - [Distribution Panels Pinouts for the Serial Data Interface Card on page 34](#)

Serial Data Interface Card Connectors

The 12-port Serial Data Interface card has four 68-pin mini-Champ connectors on its faceplate. Each connector supports three data ports. The connectors are labeled Ports 1-3, 4-6, 7-9, and 10-12. See [Figure 4](#).

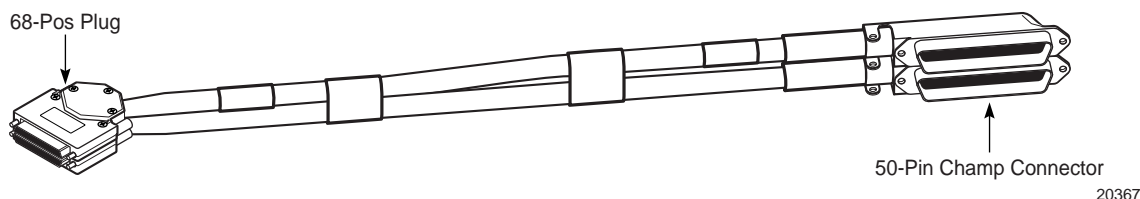
Figure 4: 12-port Serial Data Interface Card



The 12-port Serial Data Interface card can be connected to a V.35 distribution panel using a 2 m (6.5 ft) V.35 cable, to an RS-232 distribution panel using a 2 m (6.5 ft) RS-232 cable, and to an X.21 distribution panel using a 2 m (6.5 ft) X.21 cable. The card can also be connected to a customer-supplied distribution panel using a 10 m (32.8 ft) open-ended cable; the unterminated end connects to the distribution panel. Each cable assembly consists of two cables bundled into a single assembly.

The cable assemblies have a 68-Pos plug that attaches to the 68-pin mini-Champ connectors on the Serial Data Interface card faceplate, and a 50-pin Champ connector that attaches to the rear of the distribution panel. See [Figure 5](#).

Figure 5: Serial Data Interface Card Cable Assembly



The Serial Data Interface card cables are identical in appearance, but have different connector pinouts to match the corresponding distribution panel. On the V.35 distribution panel, the cable connects to two 25-pair connectors on the rear and the panel breaks out to six M34 female connectors on the front. On the RS-232 distribution panel, the cable connects to two 25-pair connectors on the rear and the panel breaks out to six DB25 female connectors on the front. On the X.21 distribution panel, the cable connects to two 25-pair connectors on the rear and the panel breaks out to six usable DB15 connectors on the front.



Note: The X.21 distribution panel has eight DB15 connectors (two sets of four), but only the first three connectors in each set are used.

See [Table 4](#) for a description of the Alcatel-Lucent approved cables and distribution panels used with the 12-port Serial Data Interface card. See [Table 5](#) for the cable pinouts for each interface type. See the 7705 SAR-8 Installation Guide for more information on the V.35, RS-232, and X.21 distribution panels.



Notes:

- The cables use small diameter 30 AWG copper. Use of the open-ended cable for punch-block applications is not recommended due to the potential for wire breakage. Other connection methods, such as screw type panels, should be used.
- The pinouts shown in [Table 5](#) are for a typical DCE connection.

Table 4: 12-port Serial Data Interface Card Cables and Distribution Panels

Part Number	Type	Description
3HE04506AB	V.35 cable, 2 m (6.5 ft)	Connects the Serial Data Interface card to the 3HE04510AA V.35 distribution panel
3HE04507AB	RS-232 cable, 2 m (6.5 ft)	Connects the Serial Data Interface card to the 3HE04511AA RS-232 distribution panel
3HE04508AB	X.21 cable, 2 m (6.5 ft)	Connects the Serial Data Interface card to the 3HE04512AA X.21 distribution panel
3HE04509AD	Open-ended SDI cable, 10 m (32.8 ft)	Connects the Serial Data Interface card to a customer-supplied external connector panel. The mini-SCSI connector attaches to the Serial Data Interface card and the open end can be directly attached to other telecom equipment.
3HE04510AA	6-port V.35 distribution panel	Breakout panel with six M34 connectors for V.35 access; requires a 3HE04506AB V.35 cable to connect to the Serial Data Interface card
3HE04511AA	6-port RS-232 distribution panel	Breakout panel with six DB25 connectors for RS-232 access; requires a 3HE04507AB RS-232 cable to connect to the Serial Data Interface card

Table 4: 12-port Serial Data Interface Card Cables and Distribution Panels (Continued)

Part Number	Type	Description
3HE04512AA	6-port X.21 distribution panel	Breakout panel with six usable DB15 connectors for X.21 access; requires a 3HE04508AB X.21 cable to connect to the Serial Data Interface card

Connector Pinouts

Table 5 shows the pinouts for the 12-port Serial Data Interface card connectors according to interface type. Table 6 describes the Serial Data Interface card connector cable twisted pairs.

Table 5: 12-port Serial Data Interface Card Connector Pinout Options

Pin Number on 68-Pin Connector	SDI Card Net Name	Signal Direction (SDIC - DCE)	V.35 Port Signal Name	RS-232 Port Signal Name	X.21 Port Signal Name
1	PA_SCT_B	Bi-Dir	SCT (B)	—	XCLK (B)
35	PA_SCT_A	Bi-Dir	SCT (A)	SCT	XCLK (A)
2	PA_TXD_A	Input	TXD (A)	TXD	T (A)
36	PA_TXD_B	Input	TXD (B)	—	T (B)
3	PA_SCR_B	Output - Tri	SCR (B)	—	S (B)
37	PA_SCR_A	Output - Tri	SCR (A)	SCR	S (A)
4	PA_CTS	Output	CTS	CTS	—
38	PA_DSR	Output	DSR	DSR	—
5	PA_TXCE_B	Input	TXCE (B)	—	—
39	PA_TXCE_A	Input	TXCE (A)	XCLK1	—
6	PA_RXD_A	Output	RXD (A)	RXD	R (A)
40	PA_RXD_B	Output	RXD (B)	—	R (B)
7	PA_DCD_B	Output	—	—	I (B)
41	PA_DCD_A	Output	DCD	DCD	I (A)
8	PA_RTS_A	Input	RTS	RTS	C (A)
42	PA_RTS_B	Input	—	—	C (B)

Table 5: 12-port Serial Data Interface Card Connector Pinout Options (Continued)

Pin Number on 68-Pin Connector	SDI Card Net Name	Signal Direction (SDIC - DCE)	V.35 Port Signal Name	RS-232 Port Signal Name	X.21 Port Signal Name
9	PA_ALB	Input	ALB	ALB	—
43	PA_DTR	Input	DTR	DTR	—
10	PA_RDL	Input	—	RDL	—
44	PA_XCLK2	Input	—	XCLK2	—
11	PA_GND	Isolated ground	—	GND	—
45	PA_RI	Output	—	RI	—
12	PB_SCT_B	Bi-Dir	SCT (B)	—	XCLK (B)
46	PB_SCT_A	Bi-Dir	SCT (A)	SCT	XCLK (A)
13	PB_TXD_A	Input	TXD (A)	TXD	T (A)
47	PB_TXD_B	Input	TXD (B)	—	T (B)
14	PB_SCR_B	Output - Tri	SCR (B)	—	S (B)
48	PB_SCR_A	Output - Tri	SCR (A)	SCR	S (A)
15	PB_CTS	Output	CTS	CTS	—
49	PB_DSR	Output	DSR	DSR	—
16	PB_TXCE_B	Input	TXCE (B)	—	—
50	PB_TXCE_A	Input	TXCE (A)	XCLK1	—
17	PB_RXD_A	Output	RXD (A)	RXD	R (A)
51	PB_RXD_B	Output	RXD (B)	—	R (B)
18	PB_DCD_B	Output	—	—	I (B)
52	PB_DCD_A	Output	DCD	DCD	I (A)
19	PB_RTS_A	Input	RTS	RTS	C (A)
53	PB_RTS_B	Input	—	—	C (B)
20	PB_ALB	Input	ALB	ALB	—
54	PB_DTR	Input	DTR	DTR	—
21	PB_RDL	Input	—	RDL	—

Table 5: 12-port Serial Data Interface Card Connector Pinout Options (Continued)

Pin Number on 68-Pin Connector	SDI Card Net Name	Signal Direction (SDIC - DCE)	V.35 Port Signal Name	RS-232 Port Signal Name	X.21 Port Signal Name
55	PB_XCLK2	Input	—	XCLK2	—
22	PB_GND	Isolated ground	—	GND	—
56	PB_RI	Output	—	RI	—
23	PC_SCT_B	Bi-Dir	SCT (B)	—	XCLK (B)
57	PC_SCT_A	Bi-Dir	SCT (A)	SCT	XCLK (A)
24	PC_TXD_A	Input	TXD (A)	TXD	T (A)
58	PC_TXD_B	Input	TXD (B)	—	T (B)
25	PC_SCR_B	Output - Tri	SCR (B)	—	S (B)
59	PC_SCR_A	Output - Tri	SCR (A)	SCR	S (A)
26	PC_CTS	Output	CTS	CTS	—
60	PC_DSR	Output	DSR	DSR	—
27	PC_TXCE_B	Input	TXCE (B)	—	—
61	PC_TXCE_A	Input	TXCE (A)	XCLK1	—
28	PC_RXD_A	Output	RXD (A)	RXD	R (A)
62	PC_RXD_B	Output	RXD (B)	—	R (B)
29	PC_DCD_B	Output	—	—	I (B)
63	PC_DCD_A	Output	DCD	DCD	I (A)
30	PC_RTS_A	Input	RTS	RTS	C (A)
64	PC_RTS_B	Input	—	—	C (B)
31	PC_ALB	Input	ALB	ALB	—
65	PC_DTR	Input	DTR	DTR	—
32	PC_RDL	Input	—	RDL	—
66	PC_XCLK2	Input	—	XCLK2	—
33	PC_GND	Isolated ground	—	GND	—
67	PC_RI	Output	—	RI	—

Table 5: 12-port Serial Data Interface Card Connector Pinout Options (Continued)

Pin Number on 68-Pin Connector	SDI Card Net Name	Signal Direction (SDIC - DCE)	V.35 Port Signal Name	RS-232 Port Signal Name	X.21 Port Signal Name
34	CGND	—	—	—	—
68	CGND	—	—	—	—

Table 6: 12-port Serial Data Interface Card Cable Twisted Pair Description

Pin Number on 68-Pin Connector	SDI Card Port Number	Port Signal Name	Signal Direction (DCE Electrical Interface)	Conductor Color Code (Base/Stripe)	SDI Cable Twisted Pair Number	Twisted Cable Pair Conductor Number
1	1, 4, 7, 10	PA_SCT_B	Bi-Dir	White/Tan	1	1
35	1, 4, 7, 10	PA_SCT_A	Bi-Dir	Tan/White	1	2
2	1, 4, 7, 10	PA_TXD_A	Input	White/Brown	2	1
36	1, 4, 7, 10	PA_TXD_B	Input	Brown/White	2	2
3	1, 4, 7, 10	PA_SCR_B	Output - Tri	White/Pink	3	1
37	1, 4, 7, 10	PA_SCR_A	Output - Tri	Pink/White	3	2
4	1, 4, 7, 10	PA_CTS	Output	White/Orange	4	1
38	1, 4, 7, 10	PA_DSR	Output	Orange/White	4	2
5	1, 4, 7, 10	PA_TXCE_B	Input	White/Yellow	5	1
39	1, 4, 7, 10	PA_TXCE_A	Input	Yellow/White	5	2
6	1, 4, 7, 10	PA_RXD_A	Output	White/Green	6	1
40	1, 4, 7, 10	PA_RXD_B	Output	Green/White	6	2
7	1, 4, 7, 10	PA_DCD_B	Output	White/Blue	7	1
41	1, 4, 7, 10	PA_DCD_A	Output	Blue/White	7	2
8	1, 4, 7, 10	PA_RTS_A	Input	White/Violet	8	1
42	1, 4, 7, 10	PA_RTS_B	Input	Violet/White	8	2
9	1, 4, 7, 10	PA_ALB	Input	White/Gray	9	1
43	1, 4, 7, 10	PA_DTR	Input	Gray/White	9	2

Table 6: 12-port Serial Data Interface Card Cable Twisted Pair Description (Continued)

Pin Number on 68-Pin Connector	SDI Card Port Number	Port Signal Name	Signal Direction (DCE Electrical Interface)	Conductor Color Code (Base/Stripe)	SDI Cable Twisted Pair Number	Twisted Cable Pair Conductor Number
10	1, 4, 7, 10	PA_RDL	Input	Tan/Brown	10	1
44	1, 4, 7, 10	PA_XCLK2	Input	Brown/Tan	10	2
11	1, 4, 7, 10	PA_GND	Isolated Ground	Tan/Pink	11	1
45	1, 4, 7, 10	PA_RI	Output	Pink/Tan	11	2
12	2, 5, 8, 11	PB_SCT_B	Bi-Dir	Tan/Orange	12	1
46	2, 5, 8, 11	PB_SCT_A	Bi-Dir	Orange/Tan	12	2
13	2, 5, 8, 11	PB_TXD_A	Input	Tan/Yellow	13	1
47	2, 5, 8, 11	PB_TXD_B	Input	Yellow/Tan	13	2
14	2, 5, 8, 11	PB_SCR_B	Output - Tri	Tan/Green	14	1
48	2, 5, 8, 11	PB_SCR_A	Output - Tri	Green/Tan	14	2
15	2, 5, 8, 11	PB_CTS	Output	Tan/Blue	15	1
49	2, 5, 8, 11	PB_DSR	Output	Blue/Tan	15	2
16	2, 5, 8, 11	PB_TXCE_B	Input	Tan/Violet	16	1
50	2, 5, 8, 11	PB_TXCE_A	Input	Violet/Tan	16	2
17	2, 5, 8, 11	PB_RXD_A	Output	Tan/Gray	17	1
51	2, 5, 8, 11	PB_RXD_B	Output	Gray/Tan	17	2
18	2, 5, 8, 11	PB_DCD_B	Output	Brown/Pink	18	1
52	2, 5, 8, 11	PB_DCD_A	Output	Pink/Brown	18	2
19	2, 5, 8, 11	PB_RTS_A	Input	Brown/Orange	19	1
53	2, 5, 8, 11	PB_RTS_B	Input	Orange/Brown	19	2
20	2, 5, 8, 11	PB_ALB	Input	Brown/Yellow	20	1
54	2, 5, 8, 11	PB_DTR	Input	Yellow/Brown	20	2
21	2, 5, 8, 11	PB_RDL	Input	Brown/Green	21	1

Table 6: 12-port Serial Data Interface Card Cable Twisted Pair Description (Continued)

Pin Number on 68-Pin Connector	SDI Card Port Number	Port Signal Name	Signal Direction (DCE Electrical Interface)	Conductor Color Code (Base/Stripe)	SDI Cable Twisted Pair Number	Twisted Cable Pair Conductor Number
55	2, 5, 8, 11	PB_XCLK2	Input	Green/Brown	21	2
22	2, 5, 8, 11	PB_GND	Isolated Ground	Brown/Blue	22	1
56	2, 5, 8, 11	PB_RI	Output	Blue/Brown	22	2
23	3, 6, 9, 12	PC_SCT_B	Bi-Dir	Brown/Violet	23	1
57	3, 6, 9, 12	PC_SCT_A	Bi-Dir	Violet/Brown	23	2
24	3, 6, 9, 12	PC_TXD_A	Input	Brown/Gray	24	1
58	3, 6, 9, 12	PC_TXD_B	Input	Gray/Brown	24	2
25	3, 6, 9, 12	PC_SCR_B	Output - Tri	Pink/Orange	25	1
59	3, 6, 9, 12	PC_SCR_A	Output - Tri	Orange/Pink	25	2
26	3, 6, 9, 12	PC_CTS	Output	Pink/Yellow	26	1
60	3, 6, 9, 12	PC_DSR	Output	Yellow/Pink	26	2
27	3, 6, 9, 12	PC_TXCE_B	Input	Pink/Green	27	1
61	3, 6, 9, 12	PC_TXCE_A	Input	Green/Pink	27	2
28	3, 6, 9, 12	PC_RXD_A	Output	Pink/Blue	28	1
62	3, 6, 9, 12	PC_RXD_B	Output	Blue/Pink	28	2
29	3, 6, 9, 12	PC_DCD_B	Output	Pink/Violet	29	1
63	3, 6, 9, 12	PC_DCD_A	Output	Violet/Pink	29	2
30	3, 6, 9, 12	PC_RTS_A	Input	Pink/Gray	30	1
64	3, 6, 9, 12	PC_RTS_B	Input	Gray/Pink	30	2
31	3, 6, 9, 12	PC_ALB	Input	Orange/Yellow	31	1
65	3, 6, 9, 12	PC_DTR	Input	Yellow/Orange	31	2
32	3, 6, 9, 12	PC_RDL	Input	Orange/Green	32	1
66	3, 6, 9, 12	PC_XCLK2	Input	Green/Orange	32	2

Table 6: 12-port Serial Data Interface Card Cable Twisted Pair Description (Continued)

Pin Number on 68-Pin Connector	SDI Card Port Number	Port Signal Name	Signal Direction (DCE Electrical Interface)	Conductor Color Code (Base/Stripe)	SDI Cable Twisted Pair Number	Twisted Cable Pair Conductor Number
33	3, 6, 9, 12	PC_GND	Isolated Ground	Orange/Blue	33	1
67	3, 6, 9, 12	PC_RI	Output	Blue/Orange	33	2
34		CGND	Chassis Ground	Orange/Violet	34	1
68		CGND	Chassis Ground	Violet/Orange	34	2

Notes:

The signal direction is relative to the Serial Data Interface card ports.

The conductor color code names are based on Madison Cable (Tyco Electronics) part number 68KBKLF065.

The conductor cable size is 30 AWG stranded (7 x 38).

The conductor cable contains an inner shield of aluminum with an outer shield of copper braid. The copper braid is connected to the metal back shell housing of the mini-Champ connector.

The port signal names PA_xxx map to ports 1, 4, 7 and 10; the port signal names PB_xxx map to ports 2, 5, 8 and 11; the port signal names PC_xxx map to ports 3, 6, 9 and 12.

Distribution Panels Pinouts for the Serial Data Interface Card

For V-35, RS-232, and X.21 distribution panels pinout information, refer to the 7705 SAR-8 Installation Guide, “Distribution Panels and Cables”.

LED Descriptions

In This Chapter

This chapter provides information on the following topic:

- [Serial Data Interface Card LEDs on page 36](#)

Serial Data Interface Card LEDs

Figure 6 shows the LEDs on the 12-port Serial Data Interface card faceplate. Table 7 describes the LEDs. For a description of the connectors, see [Serial Data Interface Card Connectors](#).

Figure 6: 12-port Serial Data Interface Card LEDs

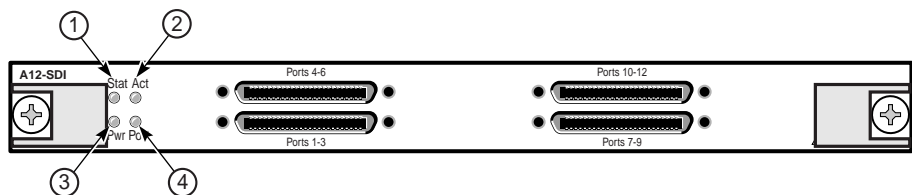
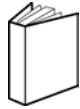


Table 7: 12-port Serial Data Interface Card LEDs

Key	Label	Description
1	Stat	Card status LED: Green (blinking) : Initializing Green (solid) : Operationally up, administratively up Amber : Operationally down, administratively up Unlit : Operationally down, administratively down
2	Act	Card active LED: Green (lit) : Card is active Unlit : Card is not active
3	Pwr	Power status LED: Blue : On Unlit : No power or faulty power
4	Port	Aggregate port status LED (ports 1 to 12): Green : All ports are active Unlit : All ports are disabled or shut down Amber (blinking) : At least one port is in loopback Amber : At least one data link is experiencing HCM synchronization loss

Customer documentation and product support



Customer documentation

<http://www.alcatel-lucent.com/myaccess>

Product manuals and documentation updates are available at [alcatel-lucent.com](http://www.alcatel-lucent.com). If you are a new user and require access to this service, please contact your Alcatel-Lucent sales representative.



Technical Support

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