

12

Component Replacement: Networking Hardware

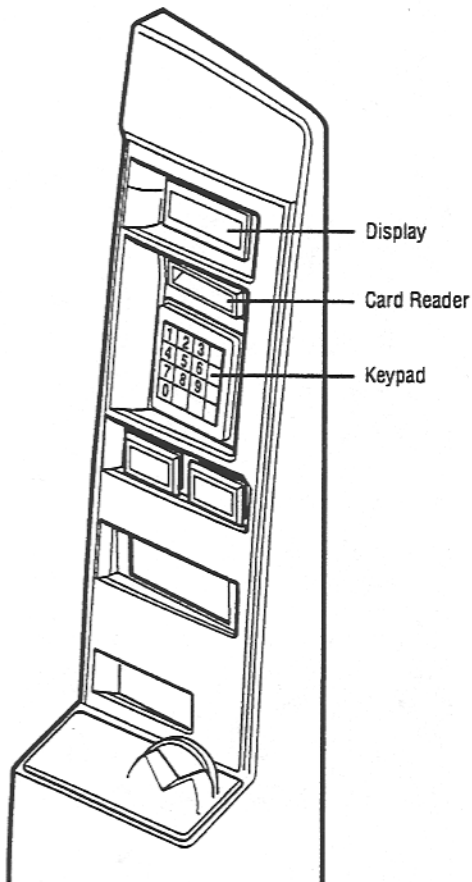
This chapter describes procedures for replacing the following networking hardware:

- ◆ Hubble board
- ◆ Acres and DCN board
- ◆ Network interface boards
- ◆ Card reader
- ◆ Keypad
- ◆ Display
- ◆ Ethernet board

Overview

This chapter contains replacement procedures for networking hardware. The player tracking boards (including Hubble, Acres, and network boards) are located under the top cap. The procedures for replacing each board shows board locations. Figure 12-1 shows the locations of the player tracking card reader, keypad, and display. The casino furnishes these three components.

Figure 12-1 Currency Column



The following table lists the procedures in this chapter.

	See
Replacing the Hubble Board	page 12-3
Replacing the Acres and DCN Boards	page 12-9
Replacing the Network Interface Board	page 12-12
Replacing the Card Reader	page 12-30
Replacing the Keypad	page 12-34
Replacing the Display	page 12-36
Replacing the Ethernet Board	page 12-38

Replacing the Hubble Board

The player tracking system in the Odyssey slot machine requires a translator board and at least one network interface board under the top cap. The translator board is either an Acres board (with a DCN board) or a Hubble board.

This section contains replacement procedures for the Hubble board. For replacement procedures for the Acres and DCN boards in an Acres configuration, see "Replacing the Acres and DCN Boards" on page 12-9.

The kind of network interface board in a Hubble player tracking configuration depends on the player tracking system, as shown in the following table:

Player Tracking System	Network Interface Board
CDS	Sentinel II and SMI IV
Bally	MasterCom and DMKA
IGT	IGT PT95A
GSI	SMI IV
MGM	Universal Interface Board
Caesar's	IGTPT95A
Mikohn	Mikohn SMIB
Acres Rio	Acres DCN

Figure 12-2 on page 12-4 shows the top of the machine with CDS network interface boards installed.


 **Note:** The plate that holds the SMI IV and Sentinel II boards may be rotated 180° so that the SMI IV board is installed to the right of the Sentinel board, as you face the machine. This difference in the locations of the two boards has no effect on the operation of the slot machine.

Figure 12-2 Location of Hubble and CDS Boards

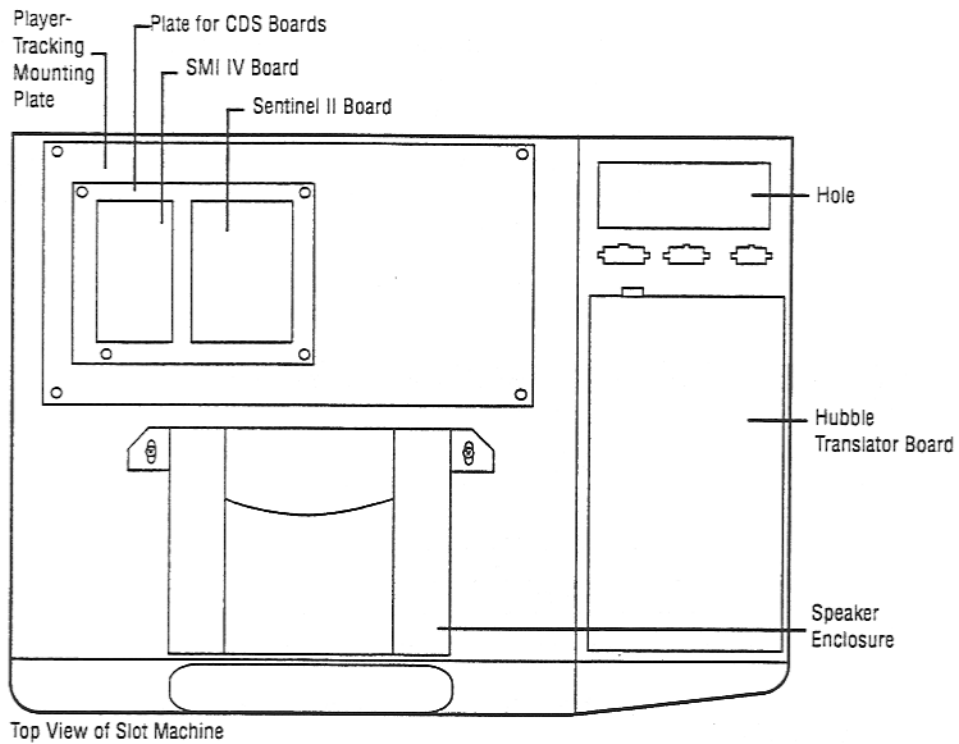
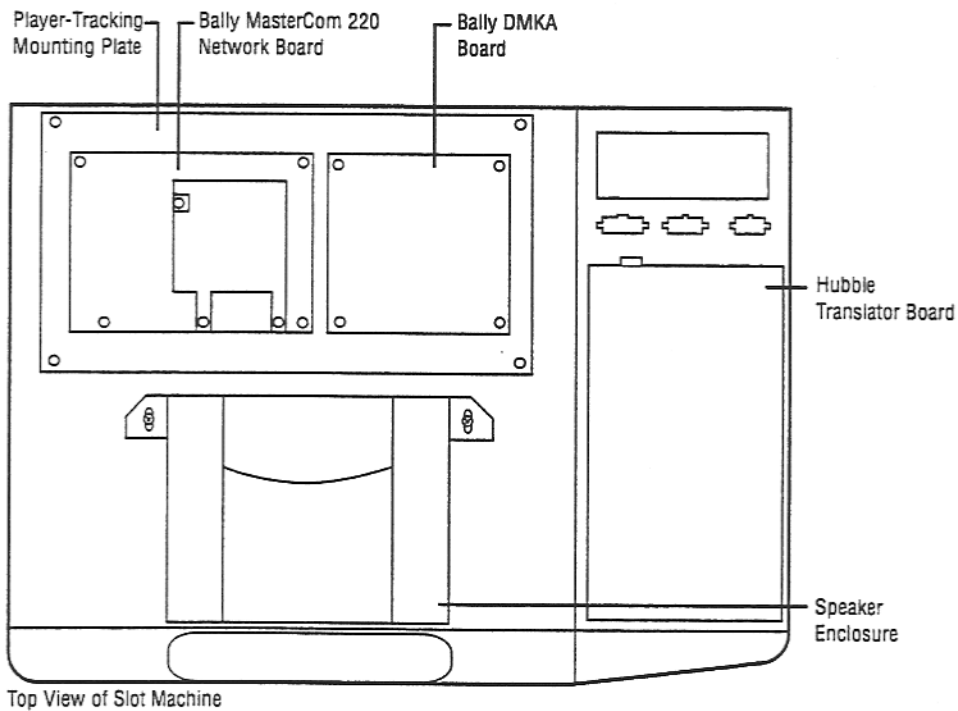


Figure 12-3 shows the top of the machine with a Bally interface board installed.

Figure 12-3 Location of Hubble and Bally Boards



The location for the following network boards is the same:

- ◆ IGT
- ◆ GSI
- ◆ MGM
- ◆ Caesar's
- ◆ Mikohn

Only one of these boards is installed in a machine. Figure 12-4 shows the top of the machine with any one of these boards installed.

Figure 12-4 Locations of Hubble and IGT, GSI, MGM, Caesar's, and Mikohn Network Boards

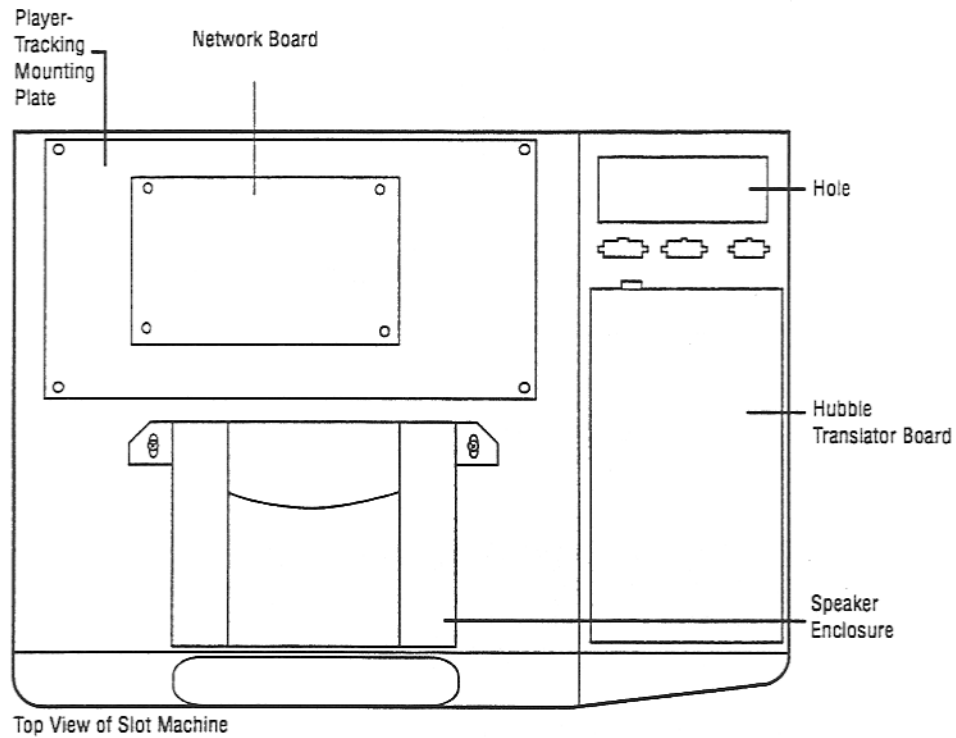
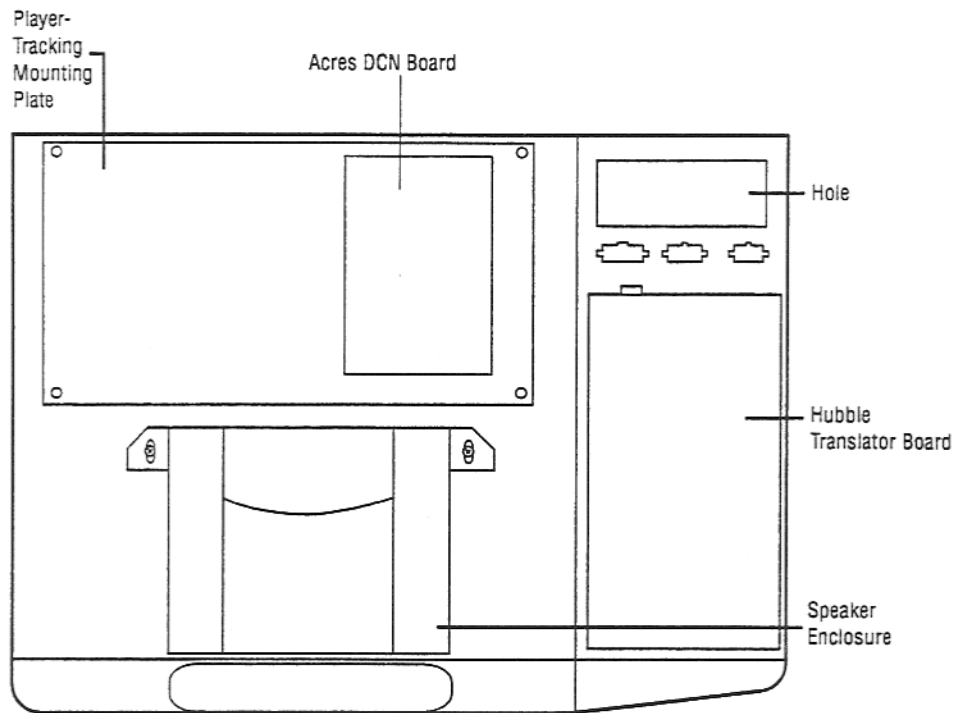


Figure 12-5 on page 12-6 shows the top of the machine with an Acres DCN board installed in a Hubble configuration for Acres Rio.

Figure 12-5 Location of Acres DCN board in a Hubble Configuration



Top View of Slot Machine

The following table is a summary of the sections in this procedure. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.


Replacing the Hubble Board
"Removing the Hubble Board" on page 12-6
"Installing the Hubble Board" on page 12-8
"Verifying Hubble Board Operation" on page 12-9

Removing the Hubble Board

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

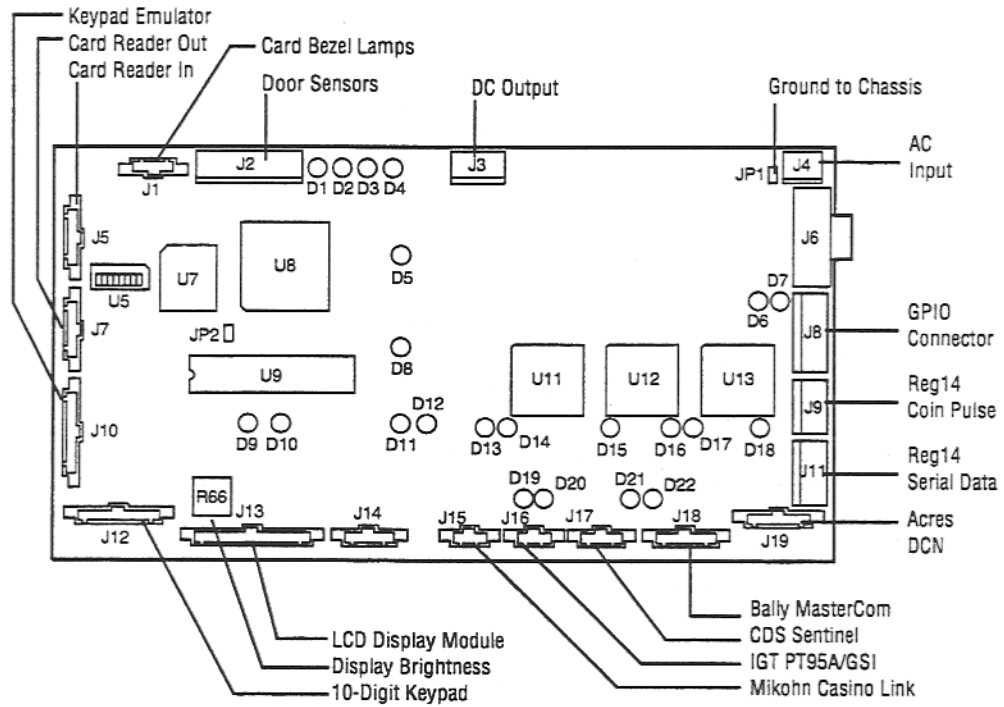
1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.

 **Warning:** Failure to turn off the machine can result in personal injury or damage to equipment.

To remove the Hubble board, perform the following steps:

1. Remove the top cap. Refer to "Removing the Top Cap" on page 2-16.
2. Unplug the connectors from the Hubble board. The locations for the connectors are marked on the board and are shown in Figure 12-6. The connectors to unplug are different, depending on the network interface board. Table 12-1 on page 12-8 describes the connectors to unplug for each network interface board.

Figure 12-6 Hubble Board Connectors




 **Important:** Unplug the J4 AC power connector first.

Table 12-1 Hubble Connectors for Network Interface Boards and Power


Hubble Connector	Function	Connector Type	CDS	Network Interface Boards					
				Bally	IGT & Caesar's	GSI	MGM	Mi-kohn	Rio
J4	AC power	3-pin, 156 mils	x	x	x	x	x	x	
J8	Serial interface between the GPIO board and the Hubble board	6-pin, 156 mils	x	x	x	x	x	x	x
J15	CDS SMI IV board	4-pin, 100 mils	x				x	x	
J3	DC power	4-pin, 156 mils	x	x			x		x
J18	Bally MasterCom serial interface	7-pin, 100 mils		x					
J16	Serial interface between the PT95 and the Hubble board	4-pin, 100 mils			x	x			x
J14	Display interface	6-pin, 100 mils			x				x
J13	IGT display	14-pin, 100 mils			x				
J1	LED driver (Some IGT boards may not have this connector)	5-pin, 100 mils			x				
J2	Door interface	8-pin, 100 mils			x			x	x

3. Remove the screws securing the board to the top of the cabinet.
4. Lift the board from the top of the cabinet.

Installing the Hubble Board


To install the Hubble board, perform the following steps.

1. Refer to Figure 12-2 on page 12-4 (if the machine has a CDS board) or Figure 12-3 on page 12-4 (if the machine has Bally boards). Place the Hubble board over the six pem nut standoffs in the top of the cabinet. The standoffs are labeled 1 through 6 in the figures.

 **Note:** If you are replacing an Acres board with a Hubble board, the six standoffs are the same standoffs used to secure the Acres DCN plate to the top of the cabinet.

2. Align the six screw holes in the board with the six pem nut standoffs.
3. Secure the board to the machine with six screws.
4. If you are replacing an Acres translator board with a Hubble translator board, and the machine is configured for the Bally player tracking system, install the Bally DMKA board as follows:
 - a. Align the holes of the Bally DMKA board (removed from the Acres DCN plate) with the holes shown for the Bally DMKA board in Figure 12-3 on page 12-4.
 - b. Secure the board to the mounting plate, using the standoffs in each corner of the plate.

5. Refer to Table 12-1 on page 12-8 and plug in the appropriate connectors on the network interface board to the connectors on the Hubble board.

 **Warning:** Be sure to plug in the J4 AC power connector last.

6. Configure the MMS. For the procedure, see “Configuring the Network” on page 4-20.

Verifying Hubble Board Operation

To verify Hubble board operation, perform the following steps:

1. To verify that the Hubble board is communicating with the slot machine and the network board, check that the LEDs at the Hubble board locations listed below are flickering.

Communication	Hubble LED Location
Odyssey to Hubble board	D15, D18
Hubble to CDS boards	D9, D10
Hubble to Bally boards	D13, D14
Hubble to IGT board	D11, D12
Hubble to GSI board	D11, D12
Hubble to MGM board	D9, D10
Hubble to Caesar's board	D11, D12
Hubble to Mikohn	D9, D10
Hubble to Acres DCN (for Rio)	D11, D12


2. Install the top cap. Refer to “Installing the Top Cap” on page 2-16.

Replacing the Acres and DCN Boards

The player tracking system in the Odyssey slot machine requires a translator board and at least one network interface board under the top cap. The translator board is either an Acres board (with a DCN board) or a Hubble board.

This section contains replacement procedures for the Acres and DCN boards. For replacement procedures for the Hubble board, see “Replacing the Hubble Board” on page 12-3.

For the replacement procedure for the Acres DCN board in a Hubble configuration, see the procedure “Removing the Acres Rio Board from a Hubble Configuration” on page 12-21.

 **Important:** In an Acres configuration, whenever an Acres translator board or an Acres DCN board needs replacement, you must replace both boards with a single Hubble translator board. (The Acres boards are being phased out for Acres configurations.) You need not replace the network interface board, but you may have to change its location.

In a Hubble configuration such as Acres Rio, whenever the Acres DCN board needs replacement, you replace only the Acres DCN board.

The kind of network interface board in an Acres player tracking configuration depends on the player tracking system, as shown in the following table:

Player Tracking System	Network Interface Board
CDS	Sentinel II and SMI IV
Bally	MasterCom and DMKA

The following table is a summary of the sections in this procedure. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.


Replacing the Acres and DCN Boards
Removing the Acres Boards
"Preparing for Board Removal" on page 12-13
"Removing the Acres Translator and Acres DCN Boards" on page 12-12
"Installing the Hubble Board" on page 12-8
<i>Important:</i> Do not install Acres boards.
"Verifying Hubble Board Operation" on page 12-9

Removing the Acres Boards

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.

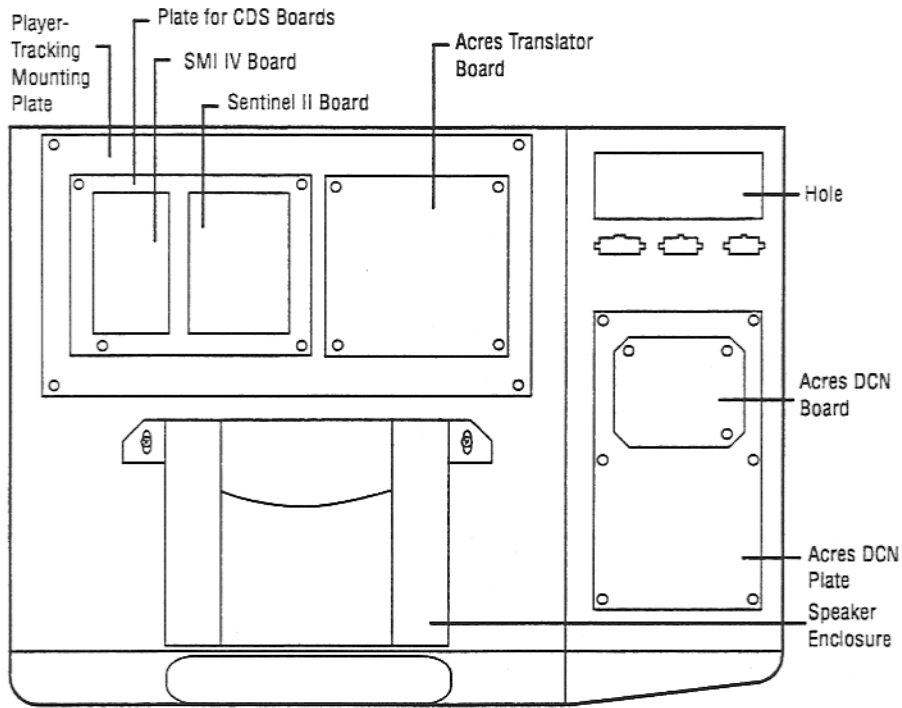
 **Warning:** Failure to turn off the machine can result in personal injury or damage to equipment.

Preparing for Board Removal

To access the Acres boards, you must remove the top cap. Refer to "Removing the Top Cap" on page 2-16.

Figure 12-7 on page 12-11 shows the top of the machine with CDS network interface boards installed.

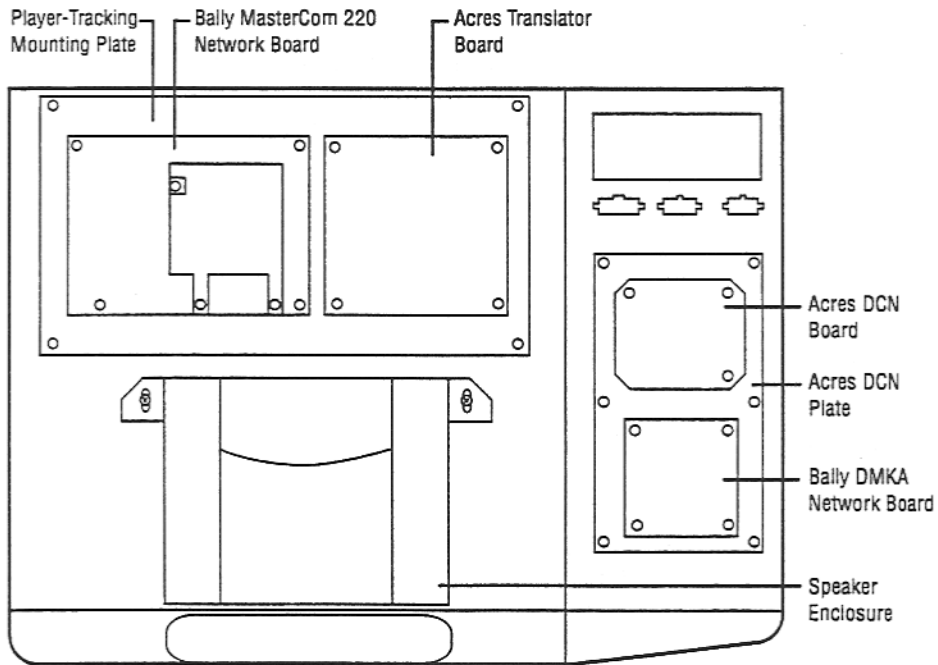
Figure 12-7 Location of Acres and CDS Boards



Top View of Slot Machine

Figure 12-8 shows the top of the machine with a Bally network interface board installed.

Figure 12-8 Location of Acres and Bally Boards



Top View of Slot Machine

Removing the Acres Translator and Acres DCN Boards

To remove the Acres boards, perform the following steps:

1. Unplug the connectors from the Acres board. The connectors to unplug are different, depending on the network interface board.

Table 12-2 describes the connectors to unplug for the CDS and Acres network interface boards.


 **Important:** Unplug the power cable from the J3 connector on the Acres translator board first.

Table 12-2 Acres Board Connections

From	To
Odyssey 9Vdc power supply	Acres translator board connector J3
GPIO Port P36	Acres DCN connector P1
DCN connector P1	Acres translator board connector P1
Acres translator board connector J4	SMI IV connector J8 (CDS) or MasterCom 220 connector J2 (Bally)

2. If the machine is configured for a Bally board, refer to Figure 12-8 on page 12-11 and remove the Bally DMKA board. Set the board aside for later installation.
3. Remove the Acres DCN plate by lifting up the plate at each of the standoff locations until the plate is free from the machine.

Installing the Acres Boards

Do not replace Acres translator and DCN boards with new Acres boards. Instead, replace them with one Hubble board. See “Installing the Hubble Board” on page 12-8.

Replacing the Network Interface Board

This section contains procedures for replacing the following network interface boards:

- ◆ CDS
- ◆ Bally
- ◆ IGT
- ◆ GSI
- ◆ MGM
- ◆ Caesar’s
- ◆ Mikohn
- ◆ Acres Rio

The following table is a summary of the sections in this procedure. Perform the procedure “Preparing for Board Removal” on page 12-13, followed by the appropriate removal and installation procedure. Then perform “Verifying Network Interface

Board Operation" on page 12-30. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.

Replacing the Network Interface Board

Removing the Network Interface Board

"Preparing for Board Removal" on page 12-13

"Removing the CDS Board from an Acres Configuration" on page 12-14

"Removing the CDS Board from a Hubble Configuration" on page 12-15

"Removing the Bally Boards from an Acres Configuration" on page 12-16

"Removing the Bally Boards from a Hubble Configuration" on page 12-17

"Removing the IGT Board from a Hubble Configuration" on page 12-18

"Removing the GSI Board from a Hubble Configuration" on page 12-18

"Removing the MGM Board from a Hubble Configuration" on page 12-19

"Removing the Caesar's Board from a Hubble Configuration" on page 12-20

"Removing the Mikohn Board from a Hubble Configuration" on page 12-20

"Removing the Acres Rio Board from a Hubble Configuration" on page 12-21

"Installing the Network Interface Board" on page 12-21

"Installing the CDS Boards in an Acres Configuration" on page 12-22

"Installing the CDS Boards in a Hubble Configuration" on page 12-23

"Installing the Bally Boards in an Acres Configuration" on page 12-24

"Installing the Bally Boards in a Hubble Configuration" on page 12-25

"Installing the IGT Board in a Hubble Configuration" on page 12-26

"Installing the GSI Board in a Hubble Configuration" on page 12-27

"Installing the MGM Board in a Hubble Configuration" on page 12-27

"Installing the Caesar's Board in a Hubble Configuration" on page 12-28

"Installing the Mikohn Board in a Hubble Configuration" on page 12-28

"Installing the Acres Rio Board in a Hubble Configuration" on page 12-29

"Verifying Network Interface Board Operation" on page 12-30

Removing the Network Interface Board

To remove a network interface board, you must perform some preliminary steps.

Preparing for Board Removal

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.



Warning: Failure to turn off the machine can result in personal injury or damage to equipment.

To prepare for board removal, perform the following steps:

1. Remove the top cap. Refer to "Removing the Top Cap" on page 2-16.
2. Depending on which network interface board you are replacing, find and perform the appropriate removal procedure below.

Removing the CDS Board from an Acres Configuration

To remove the CDS network interface boards from an Acres configuration, refer to Figure 12-7 on page 12-11 and perform the following steps:

Important: The CDS network interface boards consist of an SMI IV board mounted on a plate with a Sentinel II board. You must replace both boards by removing the mounting plate with the boards.

1. Refer to Table 12-3 and unplug the following network power connections:

Warning: Be sure to disconnect the Odyssey 9Vdc power supply from the Acres translator board first.

Table 12-3 CDS/Acres Network Power Connections

From	To
Odyssey 9Vdc power supply (under rear mounting plate of Acres boards)	Acres translator board connector J3
Odyssey Vdc power supply	SMI IV connector J5

2. Refer to Table 12-4 and disconnect the following slot lines:

Table 12-4 CDS Slot Line Connections

From	To
CDS Sentinel II connector J4	Bank in slot line
CDS Sentinel II connector J5	Bank out slot line

3. Disconnect the door sensors cable for the drop-door switch as follows:
 - a. Determine whether pin 9, in the long white connector near the left edge of the SMI IV board, is connected to a green and white cable (for a magnetic drop-door switch) or a black and red cable (for a mechanical drop-door switch).

Important: Pin 9 is configured for the drop-door switch at the factory, but the casino may have reconfigured the long white connector so that the drop-door switch connector must be plugged into a different pin.
 - b. Disconnect the cable from pin 9, or the reconfigured pin, and make a note of the pin number and the colors of the cable you disconnected.
4. Refer to Table 12-5 and unplug the following data signal connections:

Table 12-5 CDS/Acres Data Signal Connections

From	To
DCN connector P1	Acres translator board connector P1
Acres translator board connector J4	SMI IV connector J8

5. Refer to Table 12-6 and unplug the following discrete signal connections:

Table 12-6 CDS Discrete Signal Connections


From	To
Odyssey port P37	Hubble connector J2 and SMI IV connector J7, pin groups 7 and 8
CDS card reader	Sentinel II connector J2
CDS keypad	Sentinel II connector J6
Sentinel II connector J1	CDS display


6. Refer to Figure 12-7 on page 12-11 and remove the CDS boards by pulling up on the player-tracking mounting plate at each standoff location until the plate snaps off the top of the machine. Lift the plate and CDS boards from the machine.

To install the new CDS boards, proceed to "Installing the CDS Boards in an Acres Configuration" on page 12-22.

Removing the CDS Board from a Hubble Configuration

To remove the CDS network interface boards from a Hubble configuration, refer to Figure 12-2 on page 12-4 and perform the following steps:

 **Important:** The CDS network interface boards consist of an SMI IV board mounted on a plate with a Sentinel II board. You must replace both boards by removing the mounting plate with the boards.

 **Note:** In jurisdictions with loss limit regulations that prevent players from losing more than \$500 per day, a loss lockout board is installed. The board is provided by the casino and is located on the player-tracking mounting plate. For removal instructions, see the casino operator.

1. Refer to Table 12-7 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Hubble translator board first.

Table 12-7 Hubble/CDS Network Power Connections

From	To
Odyssey unswitched power supply	Hubble connector J4
Hubble connector J3	SMI IV connector J5 or Sentinel 9Vdc

2. Refer to Table 12-8 and disconnect the following slot lines:

Table 12-8 CDS Slot Line Connections

From	To
Sentinel II connector J4	Bank in slot line
Sentinel II connector J5	Bank out slot line

3. Disconnect the door sensors cable for the drop-door switch as follows:
 - a. Determine whether pin 9, in the long white connector near the left edge of the SMI IV board, is connected to a green and white cable (for a magnetic drop-door switch) or a black and red cable (for a mechanical drop-door switch).


 **Important:** Pin 9 is configured for the drop-door switch at the factory, but the casino may have reconfigured the long white connector so that the drop-door switch connector must be plugged into a different pin.
 - b. Disconnect the cable from pin 9, or the reconfigured pin, and make a note of the pin number and the colors of the cable you disconnected.
4. Unplug Hubble connector J15 from the SMI IV connector J8.
5. Refer to Table 12-9 and unplug the following discrete signal connections:

Table 12-9 CDS Discrete Signal Connections

From	To
Odyssey port P37	Hubble connector J2 and SMI IV connector J7, pin groups 7 and 8
CDS card reader	Sentinel II connector J2
CDS keypad	Sentinel II connector J6
Sentinel II connector J1	CDS display

6. Refer to Figure 12-2 on page 12-4 and remove the CDS boards by pulling up on the player-tracking mounting plate at each standoff location until the plate snaps off the top of the machine. Lift the plate and CDS boards from the machine.

To install the new CDS boards, proceed to "Installing the CDS Boards in a Hubble Configuration" on page 12-23.

Removing the Bally Boards from an Acres Configuration

To remove the Bally network interface boards from an Acres configuration, refer to Figure 12-8 on page 12-11 and perform the following steps:

1. Refer to Table 12-10 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Acres translator board first.

Table 12-10 Bally/Acres Network Power Connections

From	To
Odyssey 9Vdc power supply (under rear mounting plate of Acres boards)	Acres translator board connector J3
Odyssey Vdc power supply	MasterCom 220 connector J1

2. Unplug the connection from the Bally MasterCom 220 connector J3 to the slot line.
3. Refer to Table 12-11 and unplug the following data signal connections:

Table 12-11 Bally/Acres Data Signal Connections

From	To
DCN connector P1	Acres translator board connector P1
Acres translator board connector J4	MasterCom 220 connector J2

4. Refer to Table 12-12 and unplug the following discrete signal connections:

Table 12-12 Bally Discrete Signal Connections

From	To
GPIO port P37	MasterCom 220 connector J13
Bally card reader	DMKA board connector J3
Bally keypad and display	DMKA board connector J6

5. Refer to Figure 12-8 on page 12-11 and remove each Bally board by lifting up the board at each of the standoff locations until the board is free of the player-tracking mounting plate.

To install the new Bally boards, proceed to “Installing the Bally Boards in an Acres Configuration” on page 12-24.

Removing the Bally Boards from a Hubble Configuration

To remove the Bally network interface boards from a Hubble configuration, refer to Figure 12-3 on page 12-4 and perform the following steps:

1. Refer to Table 12-13 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Hubble translator board first.

Table 12-13 Bally/Hubble Network Power Connections

From	To
Odyssey unswitched power supply	Hubble connector J4
Hubble connector J3	MasterCom 220 connector J1

2. Unplug the connection from the MasterCom 220 connector J3 to the slot line.
3. Refer to Table 12-14 and unplug the following data signal connections:

Table 12-14 Bally/Hubble Data Signal Connections

From	To
Hubble connector J18	MasterCom 220 connector J2
GPIO port P36	Hubble connector J8

4. Refer to Table 12-15 and unplug the following discrete signal connections:

Table 12-15 Bally Discrete Signal Connections

From	To
GPIO port P37	MasterCom 220 connector J13
Bally card reader	DMKA board connector J3
Bally keypad and display	DMKA board connector J6

5. Refer to Figure 12-3 on page 12-4 and remove each Bally board by lifting up the board at each of the standoff locations until the board is free of the player-tracking mounting plate.

To install the new Bally boards, “Installing the Bally Boards in a Hubble Configuration” on page 12-25.

Removing the IGT Board from a Hubble Configuration

To remove the IGT network interface board from a Hubble configuration, refer to Figure 12-4 on page 12-5 and perform the following steps:

1. Refer to Table 12-16 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Hubble translator board first.

Table 12-16 IGT Network Power Connections

From	To
Odyssey unswitched power supply	Hubble connector J4
Hubble connector J3	PT95A connector J3

2. Unplug the connection from the PT95A connector J1 to the slot line.
3. Unplug the connection from the Hubble connector J16 to the PT95A connector J5.
4. Refer to Table 12-17 and unplug the following discrete signal connections:

Table 12-17 IGT Discrete Signal Connections

From	To
GPIO port P37	PT95A board connector J5
IGT card reader	PT95A board connector J2
Hubble connector J14	
IGT keypad and display	Hubble connector J13

5. Remove the IGT PT95A board by lifting it up at each of the standoff locations until the board is free of the player-tracking mounting plate.

To install the new IGT board, proceed to "Installing the IGT Board in a Hubble Configuration" on page 12-26 to.

Removing the GSI Board from a Hubble Configuration

To remove the GSI slot machine interface board (SMIB) from a Hubble configuration, refer to Figure 12-4 on page 12-5 and perform the following steps:

1. Refer to Table 12-18 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Hubble translator board first.

Table 12-18 GSI Network Power Connections

From	To
Odyssey unswitched power supply	Hubble connector J4
Odyssey unswitched power supply	SMIB connector J8

2. Unplug the connection from the SMIB connector J7 to the slot line.

3. Refer to Table 12-19 and unplug the following data signal connections:

Table 12-19 GSI Data Signal Connections

From	To
GPIO port P36	Hubble connector J8
Hubble connector J16	SMIB connector J1 (optics board)

4. Refer to Table 12-20 and unplug the following discrete signal connections:

Table 12-20 GSI Discrete Signal Connections

From	To
GPIO port P37	Hubble connector J2
GSI card reader	SMIB connector J1
SMIB connector J9	GSI LCD

5. Remove the GSI board by lifting it up at each of the standoff locations until the board is free of the player-tracking mounting plate.

To install the new GSI board, proceed to "Installing the GSI Board in a Hubble Configuration" on page 12-27.

Removing the MGM Board from a Hubble Configuration

To remove the MGM Universal Interface Board (UIB) from a Hubble configuration, refer to Figure 12-4 on page 12-5 and perform the following steps:

1. Refer to Table 12-21 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Hubble translator board first.

Table 12-21 Hubble/MGM Network Power/Serial Connections

From	To
Odyssey unswitched power supply P39	Hubble connector J4
Hubble connectors J15 and J3	UIB JW2 and UIB JW5

2. Disconnect the slot lines. Slot line connections are supplied by MGM.
3. Disconnect the door sensors cable for the drop-door switch by unplugging the Odyssey P37 connector from the UIB J4A/B connector.
4. Disconnect the C3 communications by unplugging the Odyssey P36 connector from the Hubble J8 connector.
5. Disconnect any other connections to the UIB board (connections supplied by MGM).
6. Remove the UIB by lifting it up at each of the standoff locations until the board is free of the player-tracking mounting plate.

To install the new MGM UIB, proceed to "Installing the MGM Board in a Hubble Configuration" on page 12-27.

Removing the Caesar's Board from a Hubble Configuration

The Caesar's network board can be removed from the machine in the same way as the IGT network interface board. Refer to "Removing the IGT Board from a Hubble Configuration" on page 12-18.

To install the new Caesar's network board, proceed to "Installing the Caesar's Board in a Hubble Configuration" on page 12-28.

Removing the Mikohn Board from a Hubble Configuration

To remove the Mikohn network interface board from a Hubble configuration, refer to Figure 12-4 on page 12-5 and perform the following steps:

1. Refer to Table 12-22 and unplug the following network power connections:



Warning: Be sure to unplug the power supply from the Hubble translator board first.

Table 12-22 Mikohn/Hubble Network Power Connections

From	To
Odyssey unswitched power supply P39	Hubble connector J4
Hubble connector J15	Mikohn connector J3

2. Unplug the connection from the Mikohn connector J7 to the slot line.
3. Unplug the data signal connection from GPIO port P36 to Hubble connector J8.
4. Refer to Table 12-23 and unplug the following discrete signal connections:

Table 12-23 Mikohn Discrete Signal Connections

From	To
GPIO port P37	Hubble connector J2
Mikohn card reader	Mikohn connector J9
Mikohn display	Hubble connector J13
Mikohn keypad	Mikohn connector J9

5. Refer to Figure 12-4 on page 12-5 and remove the Mikohn board by lifting up the board at each of the standoff locations until the board is free of the player-tracking mounting plate.

To install the new Mikohn board, proceed to "Installing the Mikohn Board in a Hubble Configuration" on page 12-28.

Removing the Acres Rio Board from a Hubble Configuration

To remove the Acres Rio network interface board (Acres DCN) from a Hubble configuration, refer to Figure 12-5 on page 12-6 and perform the following steps:

1. Refer to Table 12-24 and unplug the following network power connections:


 **Warning:** Be sure to unplug the power supply from the Hubble translator board first.

Table 12-24 Acres Rio Network Power Connections

From	To
Hubble connector J3	Acres DCN connector DB37
Odyssey unswitched power supply	Hubble connector J4

2. Unplug the connection from the Acres DCN connector DB37 to the slot line.
3. Refer to Table 12-25 and unplug the following data signal connections:

Table 12-25 Acres Rio/Hubble Data Signal Connections

From	To
GPIO port P36	Hubble connector J8
Hubble connector J16 and Hubble connector J3 (network power)	Acres DCN connector DB37

4. Refer to Table 12-26 and unplug the following discrete signal connections:

Table 12-26 Acres Rio Discrete Signal Connections

From	To
GPIO port P37	Hubble connector J2
Rio card reader	Acres connector DB15
Acres DCN connector DB15	Rio display

5. Refer to Figure 12-5 on page 12-6 and remove the Acres DCN board by lifting up the board until it is free of the player-tracking mounting plate.

To install the new Acres DCN board, proceed to "Installing the Acres Rio Board in a Hubble Configuration" on page 12-29.

Installing the Network Interface Board

This section contains procedures for installing the following network interface boards:

- ◆ CDS
- ◆ Bally
- ◆ IGT
- ◆ GSI
- ◆ MGM
- ◆ Caesar's
- ◆ Mikohn
- ◆ Acres Rio

Installing the CDS Boards in an Acres Configuration

To install the CDS boards in an Acres configuration, perform the following steps:

1. Refer to Figure 12-7 on page 12-11 and align the screw holes in the player-tracking mounting plate with the standoffs on the top of the machine. Secure the plate (containing the two CDS network boards) to the machine by pushing the plate onto the standoffs.
2. Refer to Table 12-27 and make the following discrete signal connections:

Table 12-27 CDS Discrete Signal Connections

Signal	From	To
Discrete door signals	GPIO port P37	SMI IV connector J7
Card reader interface	CDS card reader	Sentinel II connector J2
Keypad interface	CDS keypad	Sentinel II connector J6
CDS display interface	Sentinel II connector J1	CDS display


3. Refer to Table 12-28 and make the following serial data signal connections:


Table 12-28 CDS/Acres Data Signal Connections

Signal	From	To
Serial data interface	DCN connector P1	Acres translator board connector P1
Serial data interface	Acres translator board connector J4	SMI IV connector J8

4. If the drop door has a magnetic switch, plug the connector with the green and white wires on the door sensors cable for the drop door into pin 9 on the long white connector on the left edge of the SMI IV board.

If the drop door has a mechanical switch, plug the connector with the red and black wires on the door sensors cable into pin 9 on the long white connector on the left edge of the SMI IV board.

 **Note:** To determine the correct cable, refer to the notes you made when you disconnected this cable.

 **Important:** Pin 9 is configured for the drop-door switch at the factory, but the casino may have reconfigured the long white connector so that the door sensor cable for the drop-door switch must be plugged into a different pin.

5. Refer to Table 12-29 and make the following slot line connections:

Table 12-29 CDS Slot Line Connections

Signal	From	To
Serial data interface	Sentinel II connector J4	Bank in slot line
Serial data interface	Sentinel II connector J5	Bank out slot line


6. Refer to Table 12-30 and make the following network power connections:
 -  **Warning:** Verify all player tracking connections are secure before plugging the power cable into the Acres translator board.


Table 12-30 CDS/Acres Network Power Connections

Signal	From	To
9Vdc	Odyssey 9Vdc power supply (under rear mounting plate of Acres board)	SMI IV connector J5
9Vdc	Odyssey 9Vdc power supply	Acres translator board J3

7. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
8. Configure the MMS for the CDS system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the CDS Boards in a Hubble Configuration

To install the CDS boards in a Hubble configuration, perform the following steps:

 **Note:** In jurisdictions with loss limit regulations that prevent players from losing more than \$500 per day, a loss lockout board is installed. The board is provided by the casino and is located on the player-tracking mounting plate. For installation instructions, see the casino operator.


1. Refer to Figure 12-2 on page 12-4 and align the screw holes in the player-tracking mounting plate with the standoffs on the top of the machine. Secure the plate (containing the two CDS network boards) to the machine by pushing the plate onto the standoffs.
2. Refer to Table 12-31 and make the following discrete signal connections:


Table 12-31 CDS Discrete Signal Connections

	From	To
Discrete door signals	Odyssey port P37	SMI IV connector J7, pin groups 7 and 8
Card reader interface	CDS card reader	Sentinel II connector J2
Keypad interface	CDS keypad	Sentinel II connector J6
CDS display interface	Sentinel II connector J1	Sentinel II Connector J1

3. Plug in the cable from the Hubble connector J15 to the SMI IV connector J8.
4. If the drop door has a magnetic switch, plug the connector with the green and white wires on the door sensors cable into pin 9 on the long white connector on the left edge of the SMI IV board.

If the drop door has a mechanical switch, plug the connector with the red and black wires on the door sensors cable into pin 9 on the long white connector on the left edge of the SMI IV board.

 **Note:** To determine the correct cable, refer to the notes you made when you disconnected this cable.

 **Important:** Pin 9 is configured for the drop-door switch at the factory, but the casino may have reconfigured the long white connector so that the connector for the drop-door switch must be plugged into a different pin.

5. Refer to Table 12-32 and make the following slot line connections:

Table 12-32 CDS Slot Line Connections

Signal	From	To
Serial cable interface	Sentinel II connector J4	Bank in slot line
Serial cable interface	Sentinel II connector J5	Bank out slot line

6. Refer to Table 12-33 and make the following network power connections:


 **Warning:** Verify all player tracking connections are secure before plugging the 110Vac Odyssey unswitched power supply into the Hubble connector J4.

Table 12-33 CDS/Hubble Network Power Connections

Signal	From	To
9Vdc	Hubble connector J3	SMI IV connector J5 or Sentinel 9Vdc
110Vac	Odyssey unswitched power supply	Hubble connector J4

7. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
8. Configure the MMS for the CDS system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the Bally Boards in an Acres Configuration

To install Bally boards in an Acres configuration, perform the following steps:

1. Refer to Figure 12-8 on page 12-11 and attach the Bally boards as follows:
 - a. Align the four screw holes in the Bally MasterCom 220 board with the four standoffs in the player-tracking mounting plate and secure the board to the plate by pushing the board onto the standoffs.
 - b. Align the four screw holes in the Bally DMKA board with the four standoffs in the mounting plate and secure the board to the plate by pushing the board onto the standoffs.
2. Refer to Table 12-34 and make the following discrete signal connections:

Table 12-34 Bally Discrete Signal Connections

Signal	From	To
Discrete door signals	GPIO port P37	MasterCom 220 connector J13
Card reader interface	Bally card reader	DMKA connector J3
Keypad and display interface	Bally keypad and display	DMKA connector J6

3. Refer to table Table 12-35 and make the following serial data signal connections:

Table 12-35 Bally/Acres Data Signal Connections

Signal	From	To
Serial data interface	DCN connector P1	Acres translator board connector P1
Serial data interface	Acres translator board connector J4	MasterCom 220 connector J2

4. Make the connection from the MasterCom 220 connector J3 to the slot line.


5. Refer to Table 12-36 and make the following network power connections:
 -  **Warning:** Verify all player tracking connections are secure before plugging the power cable into the Acres translator board.

Table 12-36 Bally/Acres Network Power Connections

Signal	From	To
9Vdc	Odyssey 9Vdc power supply (under rear mounting plate of Acres boards)	MasterCom 220 connector J1
9Vdc	Odyssey 9Vdc power supply	Acres translator connector J3

6. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
7. Configure the MMS for the Bally system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the Bally Boards in a Hubble Configuration

To install Bally boards in a Hubble configuration, perform the following steps:

1. Refer to Figure 12-3 on page 12-4 and attach the Bally boards as follows:
 - a. Align the four screw holes in the Bally MasterCom 220 board with the four standoffs in the player-tracking mounting plate and secure the board to the plate by pushing the board onto the standoffs.
 - b. Align the four screw holes in the Bally DMKA board with the four standoffs in the mounting plate and secure the board to the plate by pushing the board onto the standoffs.
2. Refer to Table 12-37 and make the following discrete signal connections:

Table 12-37 Bally Discrete Signal Connections

Signal	From	To
Discrete door signals	GPIO port P37	MasterCom 220 connector J13
Card reader interface	Bally card reader	DMKA board connector J3
Keypad and display interface	Bally keypad and display	DMKA board connector J6

3. Refer to Table 12-38 and make the following data signal connections:

Table 12-38 Bally/Hubble Data Signal Connections

Signal	From	To
Serial data interface	GPIO port P36	Hubble connector J8
Serial data interface	Hubble connector J18	MasterCom 220 connector J2


4. Make the connection from the MasterCom 220 connector J3 to the slot line.
5. Refer to Table 12-39 and make the following network power connections:
 -  **Warning:** Verify all player tracking connections are secure before plugging the power cable into the Hubble translator board.

Table 12-39 Bally/Hubble Network Power Connections

Signal	From	To
9Vdc	Hubble board connector J3	MasterCom 220 connector J1
110Vac	Odyssey unswitched power supply	Hubble board connector J4

6. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
7. Configure the MMS for the Bally system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the IGT Board in a Hubble Configuration

To install the IGT PT95A board in a Hubble configuration, perform the following steps:

1. Refer to Figure 12-4 on page 12-5 and align the screw holes in the IGT board with the standoffs on the player-tracking mounting plate. Secure the board to the plate by pushing the board onto the standoffs.
2. Refer to Table 12-40 and make the following discrete signal connections:

Table 12-40 IGT Discrete Signal Connections

	From	To
Discrete door signals	GPIO port P37	PT95A connector J5
Card reader interface	IGT card reader	PT95A connector J2
Display interface	Hubble connector J14	
Keypad and display interface	IGT display and keypad	Hubble connector J13

3. Plug in the cable between the Hubble connector J16 and the PT95A board connector J5.
4. Make the connection from the PT95A connector J1 to the slot line.
5. Refer to Table 12-41 and make the following network power connections:


 **Warning:** Verify all player tracking connections are secure before plugging the power cable into the Hubble translator board.

Table 12-41 IGT Network Power Connections

Signal	From	To
9Vdc	Hubble connector J3	PT95A connector J3
110Vac	Odyssey unswitched power supply	Hubble connector J4

6. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
7. Configure the MMS for the IGT system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the GSI Board in a Hubble Configuration

To install the GSI network interface board in a Hubble configuration, perform the following steps:

1. Refer to Figure 12-4 on page 12-5 and align the screw holes in the GSI board with the standoffs on the player-tracking mounting plate. Secure the board to the plate by pushing the board onto the standoffs.
2. Refer to Table 12-42 and make the following discrete signal connections:

Table 12-42 GSI Discrete Signal Connections

Signal	From	To
Discrete door signals	GPIO port P37	Hubble connector J2
Card reader interface	GSI card reader	SMIB connector J1
Display interface	SMIB connector J9	GSI LCD

3. Refer to Table 12-43 and make the following data signal connections:

Table 12-43 GSI Data Signal Connections

From	To
GPIO port P36	Hubble connector J8
Hubble connector J16	SMIB connector J1 (optics board)

4. Plug the slot line into SMIB RJ-11 connector J7.
5. Refer to Table 12-44 and make the following network power connections:


 **Warning:** Before plugging the power cable into the Hubble translator board, verify all player tracking connections are secure.

Table 12-44 GSI Network Power Connections

Signal	From	To
110Vac	Odyssey power supply	SMIB connector J8
110Vac	Odyssey power supply	Hubble connector J4

6. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
7. Configure the MMS for the GSI system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the MGM Board in a Hubble Configuration

To install the MGM Universal Interface Board (UIB) in a Hubble configuration, perform the following steps:

1. Refer to Figure 12-4 on page 12-5 and align the screw holes in the UIB board with the standoffs on the player-tracking mounting plate. Secure the board to the plate by pushing the board onto the standoffs.
2. Connect the C3 communications by plugging the Odyssey P36 connector into the Hubble J8 connector.
3. Connect the door sensors cable for the drop-door switch by plugging the Odyssey P37 connector into the UIB J4A/B connector.

4. Connect the slot lines. Slot line connections are supplied by MGM.
5. Plug in any other UIB connections supplied by MGM.
6. Refer to Table 12-45 and make the following network power connections:


 **Warning:** Before plugging the power cable into the Hubble translator board, verify all player tracking connections are secure.

Table 12-45 Hubble/MGM Network Power/Serial Connections

Signal	From	To
110Vac	Odyssey unswitched power supply P39	Hubble connector J4
9Vdc	Hubble connectors J15 and J3	UIB connector JW2 and UIB connector JW5

Installing the Caesar's Board in a Hubble Configuration

The Caesar's network board can be installed in the same way as the IGT PT95A network interface board. Refer to "Installing the IGT Board in a Hubble Configuration" on page 12-26.

Installing the Mikohn Board in a Hubble Configuration

To install the Mikohn SMIB in a Hubble configuration, perform the following steps:

1. Refer to Figure 12-4 on page 12-5 and align the screw holes in the Mikohn board with the standoffs on the player-tracking mounting plate. Secure the board to the plate by pushing the board onto the standoffs.
2. Refer to Table 12-46 and make the following discrete signal connections:

Table 12-46 Mikohn Discrete Signal Connections

Signal	From	To
Discrete door signals	GPIO port P37	Hubble connector J2
Card reader interface and display interface	Mikohn card reader	Mikohn connector J9
Display input	Mikohn display	Hubble connector J13
Keypad interface	Mikohn keypad	Mikohn connector J9

3. For the data signal connection, connect the GPIO port 36 connector to the Hubble connector J8.
4. Make the connection from the Mikohn connector J7 to the slot line.
5. Refer to Table 12-47 and make the following network power connections:


 **Warning:** Verify all player tracking connections are secure before plugging the power cable into the Hubble translator board.

Table 12-47 Mikohn Network Power Connections

Signal	From	To
9Vdc	Hubble connector J15	Mikohn connector J3
110Vac	Odyssey unswitched power supply connector P39	Hubble connector J4

6. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
7. Configure the MMS for the Mikohn system. For the procedure, see "Configuring the Network" on page 4-20.

Installing the Acres Rio Board in a Hubble Configuration

 *Note:* Although Acres boards are being phased out of Acres configurations, they are used in this Hubble configuration.

To install the Acres Rio network board (Acres DCN) in a Hubble configuration, perform the following steps:

1. Refer to Figure 12-5 on page 12-6 and secure the Acres DCN board to the player-tracking mounting plate with Velcro strips.
2. Refer to Table 12-48 and make the following discrete signal connections:

Table 12-48 Acres Rio Discrete Signal Connections

Signal	From	To
Discrete door signals	GPIO port P37	Hubble connector J2
Card reader interface	Rio card reader	Acres DCN connector DB15
Rio display interface	Acres DCN connector DB15	Rio display

3. Refer to Table 12-49 and make (or verify) the following serial data signal connections:

Table 12-49 Acres Rio Data Signal Connections

Signal	From	To
Serial data interface	GPIO port P36	Hubble connector J8
Serial data interface	Hubble connector J16 and Hubble connector J3 (network power)	Acres DCN connector DB37

4. Refer to Table 12-50 and make the following slot line connections:

Table 12-50 Acres Rio Slot Line Connections

Signal	From	To
Serial data interface	Acres DCN connector DB37	Slot line

5. Refer to Table 12-51 and make the following network power connections:


 *Warning:* Verify all player tracking connections are secure before you plug the power cable into the Hubble translator board.

Table 12-51 Acres Rio Network Power Connections

Signal	From	To
9Vdc	Hubble connector J3	Acres DB37
110Vac	Odyssey unswitched power supply	Hubble connector J4

6. When the Hubble translator board is installed, you can verify that the board is communicating with the slot machine and the network board by checking that the LEDs at the Hubble board locations listed below are flickering.

Communication	Hubble Board LED Locations
Odyssey to Hubble	D15, D18
Hubble to Acres DCN board	D11, D12

7. Install the top cap. Refer to "Installing the Top Cap" on page 2-16.
8. Configure the MMS for the Rio casino network. For the procedure, see "Configuring the Network" on page 4-20.

Verifying Network Interface Board Operation

Verify that the Hubble board is communicating with the slot machine and the network board by checking that the LEDs at the Hubble board locations listed below are flickering.

Communication	Hubble Board LED Locations
Odyssey to Hubble board	D15, D18
Hubble to CDS boards	D9, D10
Hubble to Bally boards	D13, D14
Hubble to IGT	D11, D12
Hubble to GSI	D11, D12
Hubble to MGM	D9, D10
Hubble to Caesar's	D11, D12
Hubble to Mikohn	D9, D10
Hubble to Acres DCN	D11, D12

Replacing the Card Reader

For systems that have player tracking, the casino supplies the card reader. Its removal and installation vary, depending on the player tracking system. This procedure describes replacement of the CDS and SDS card readers.

The following table is a summary of the sections in this procedure. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.

Replacing the Card Reader
Removing the Card Reader
"Removing the Currency Column Door Cover" on page 12-31
"Removing the Card Reader from the Bracket" on page 12-31
Installing the Card Reader
"Installing the Card Reader in the Bracket" on page 12-31
"Installing the Currency Column Door Cover" on page 12-33
"Verifying Card Reader Operation" on page 12-34

Removing the Card Reader

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.



Warning: Failure to turn off the machine can result in personal injury or damage to equipment.

To remove the card reader, you must remove the currency column door cover.

Removing the Currency Column Door Cover

Remove the cover by removing the screws on the left side of the door and pulling the cover off the door.

Removing the Card Reader from the Bracket

To remove the card reader from the card reader bracket, perform the following steps.

1. On the inside of the currency column, from the underside of the shelf in the card reader bracket, remove the four screws securing the card reader to the bracket.
2. Unplug the seven-pin connector from the card reader.
3. Remove the card reader from the bracket.

Installing the Card Reader

You install the card reader first, and then you install the cover on the currency column door.

Installing the Card Reader in the Bracket

To install the card reader, perform the following steps:

1. If the card reader comes with a bracket, remove the bracket from the card reader by removing the two screws that secure the bracket to the reader.
2. Place the card reader under the shelf of the card reader bracket that is installed on the back of the currency column door.

3. Refer to Figure 12-9 and secure the reader to the bracket with four screws.


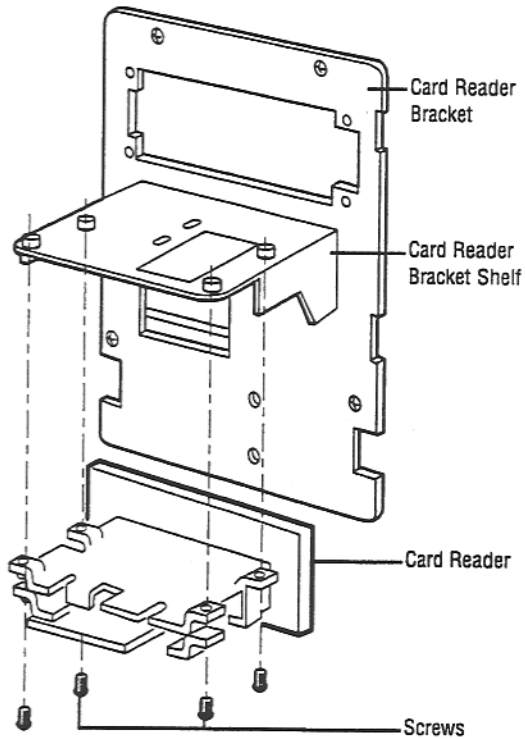
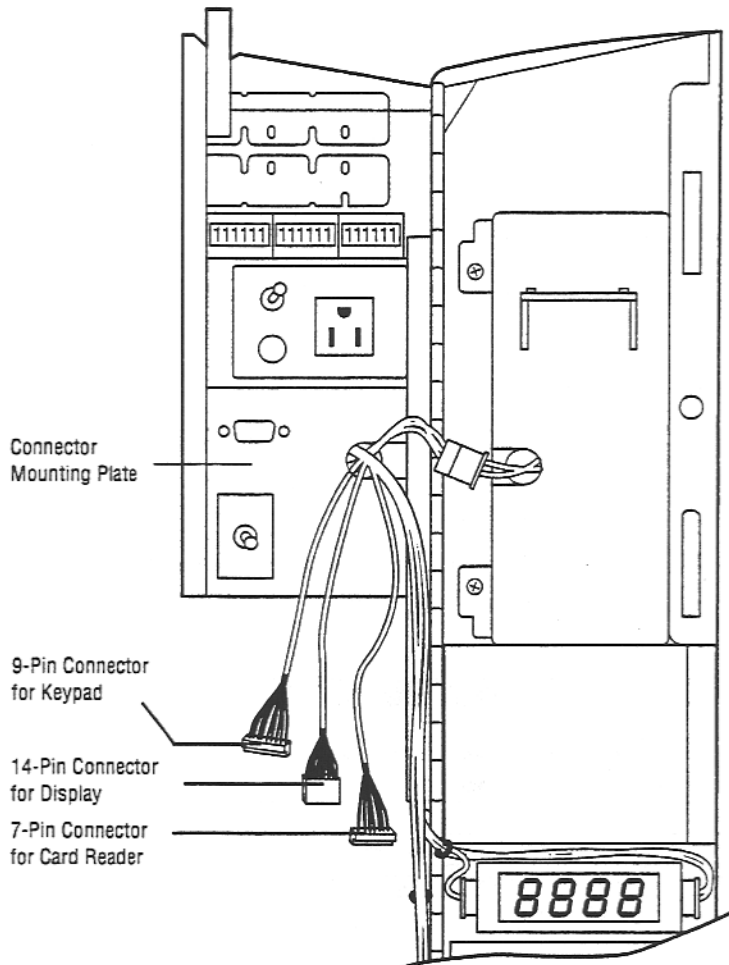
 *Note:* If the manufacturer has included a bracket with the card reader, use the two screws that secured the manufacturer's bracket to the card reader plus two additional screws. If no bracket was included, use four #4-40 screws.

Figure 12-9 Screw Locations for CDS and SDS Card Reader



4. Locate the seven-pin connector on the cable hanging from the hole in the connector mounting plate shown in Figure 12-10.

Figure 12-10 Connectors for Card Reader, Keypad, and Display



5. Plug the seven-pin connector into the connector on the card reader.

Installing the Currency Column Door Cover

To install the cover on the currency column door, perform the following steps:

1. Install the cover on the front of the currency column door as follows:
 - a. Place the cover over the door, aligning the screw holes in the cover with those in the left side of the door.
 - b. Secure the cover to the door with the screws.
2. Close the currency column door. Refer to "Closing and Locking the Currency Column Door" on page 2-9.

Verifying Card Reader Operation

To verify card reader operation, perform the following steps:

1. Ensure that the 14-pin connector on the cable coming from the hole in the connector mounting plate, shown in Figure 12-10 on page 12-33, is plugged into the display.
2. Ensure that the 9-pin connector on the cable coming from the hole in the connector mounting plate, shown in Figure 12-10, is plugged into the keypad.
3. Flip the power switch for the slot machine to the On position.
4. From the front of the currency column door, insert the systems card, provided by the casino, into the card reader. (This card is also called a global card.) If a message appears on the display, the card reader is correctly installed.

Replacing the Keypad

For systems that have player tracking, the casino supplies the keypad. Its removal and installation vary, depending on the player tracking system. This procedure describes replacement of the CDS and SDS keypads.

The following table is a summary of the sections in this procedure. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.


Replacing the Keypad
Removing the Keypad
"Removing the Currency Column Door Cover" on page 12-31
"Removing the Keypad from the Door" on page 12-35
Installing the Keypad
"Installing the Card Reader in the Bracket" on page 12-31
"Installing the Currency Column Door Cover" on page 12-33
"Verifying Keypad Operation" on page 12-35

Removing the Keypad

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.

 **Warning:** Failure to turn off the machine can result in personal injury or damage to equipment.

To remove the keypad, you must remove the currency column door cover.

Removing the Currency Column Door Cover

Refer to "Removing the Currency Column Door Cover" on page 12-31.

Removing the Keypad from the Door

To remove the keypad from the currency column door, perform the following steps:

1. From the front of the door, remove the screw from each of the four corners of the keypad.
2. Remove the connector from the keypad.
3. Pull the keypad through the hole in the door.

Installing the Keypad

First you install the keypad and then you install the currency column door cover.

Installing the Keypad in the Door

To install the CDS or SDS keypad on the currency column door, perform the following steps:

1. From the front of the currency column door, insert the keypad through the hole so you can see the numbers on the keypad when you face the front of the door.
2. Align the holes in the four corners of the keypad with those in the door.
3. Secure the keypad to the door, using four screws.
4. Locate the 9-pin connector, hanging from the hole in the connector mounting plate, shown in Figure 12-10 on page 12-33.
5. Plug the 9-pin connector into the connector on the keypad.

Installing the Currency Column Cover

Refer to "Installing the Currency Column Door Cover" on page 12-33.

Verifying Keypad Operation

To verify keypad operation, perform the following steps:

1. Flip the power switch for the slot machine to the On position.
2. Ensure that the 7-pin connector on the cable coming from the hole in the connector mounting plate, shown in Figure 12-10 on page 12-33, is plugged into the card reader.
3. Ensure that the 14-pin connector on the cable coming from the hole in the connector mounting plate, shown in Figure 12-10 on page 12-33, is plugged into the display.
4. From the front of the currency column door, insert a system card (also called a global card) into the card reader.
5. Press a number on the keypad. If the number is displayed, the keypad is correctly installed.

Replacing the Display

For systems that have player tracking, the casino supplies the display. Its removal and installation vary, depending on the player tracking system.

To replace the display, use the following instructions in conjunction with the instructions provided by the manufacturer of the display.

The following table is a summary of the sections in this procedure. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.


Replacing the Display
Removing the Display
"Removing the Currency Column Door Cover" on page 12-31
"Removing the Display from the Bracket" on page 12-37
Installing the Display
"Installing the Display in the Bracket" on page 12-37
"Installing the Currency Column Door Cover" on page 12-33
"Verifying Display Operation" on page 12-38

Removing the Display

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.

 **Warning:** Failure to turn off the machine can result in personal injury or damage to equipment.

Before you remove the display, you must remove the cover from the currency column door.

Removing the Currency Column Door Cover

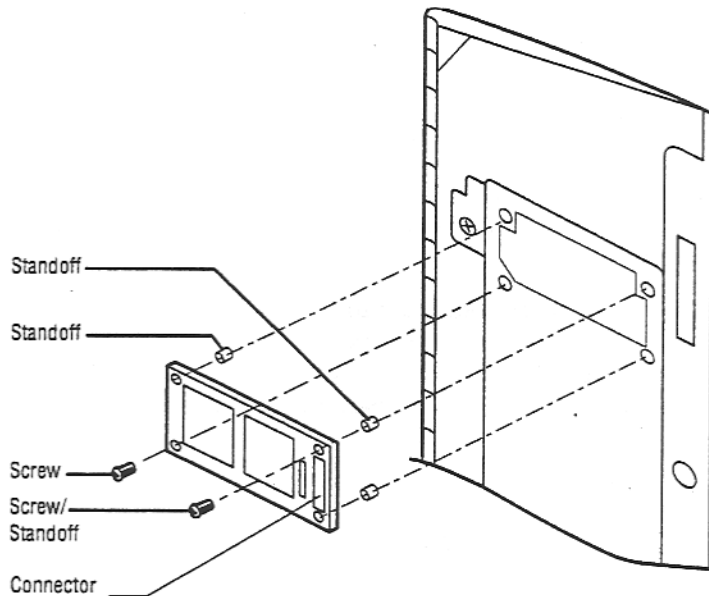
Refer to "Removing the Currency Column Door Cover" on page 12-31.

Removing the Display from the Bracket

To remove the display from the bracket, perform the following steps:

1. Refer to Figure 12-11, and from the back of the currency column door, remove the two screws and four standoffs securing the display to the bracket on the door.
2. Remove the display.

Figure 12-11 Screw and Standoff Locations on Display



Installing the Display

First you install the display, and then you install the cover on the currency column door.

Installing the Display in the Bracket

To install the display in the bracket, perform the following steps:

1. From the back of the currency column door, place the display into the bracket.
2. Ensure the connector is on the right side of the display when you face the back of the currency column door, as shown in Figure 12-11.
3. Insert two plastic standoffs in the bracket on the back on the currency column door, using a 3/16" nut driver. Figure 12-11 shows the standoff locations.
4. Secure the display to the bracket, using two #4-40 screws in the standoffs, shown in Figure 12-11.
5. Locate the 14-pin connector on the cable hanging from the hole in the connector mounting plate, shown in Figure 12-10 on page 12-33.
6. Plug the 14-pin connector into the connector on the display.

Installing the Currency Column Cover

Refer to "Installing the Currency Column Door Cover" on page 12-33.

Verifying Display Operation

To verify display operation, perform the following steps:

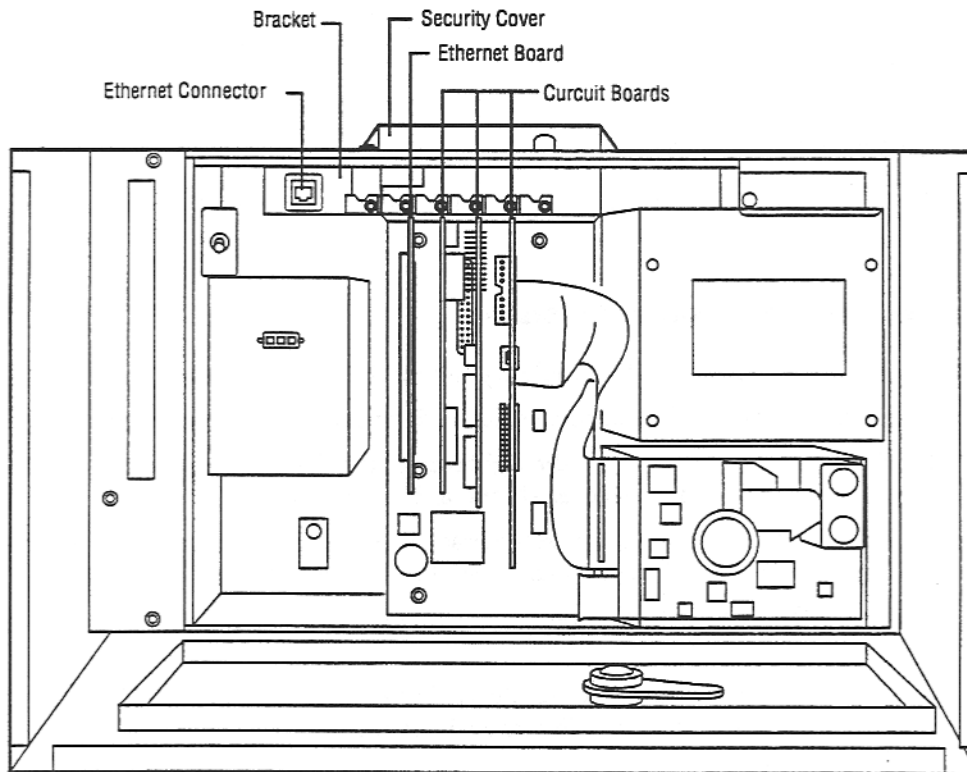
1. Flip the power switch for the slot machine to the On position.
2. If a message appears on the display, the display is correctly installed.

Replacing the Ethernet Board

The Ethernet board is present in slot machines that are connected to a Wide Area Progressive System. The board is located to the left of the circuit boards inside the electronics box. See Figure 12-12.

Important: Slot machines that are connected to a Wide Area Progressive System have a tamper-proof seal that prevents you from opening the door to the electronics box. Do not break the seal unless you are an authorized Silicon Gaming field engineer. To replace a component inside the electronics box, call 1-888-44-SLOTS.

Figure 12-12 Ethernet Board and Bracket



The following table is a summary of the sections in this procedure. If you are familiar with the procedure, you may prefer to read the text in the indicated sections only when necessary.


Replacing the Ethernet Board
Removing the Ethernet Board
"Removing the Hopper Drawer" on page 2-9
"Removing the Ethernet Board from the Bracket" on page 12-39
Installing the Ethernet Board
"Installing the Ethernet Board in the Bracket" on page 12-40
"Installing the Hopper Drawer" on page 2-10

Removing the Ethernet Board

Before beginning the procedure, be sure to turn the power off.

To turn the power off, perform the following steps:

1. Open the currency column door. Refer to "Opening the Currency Column Door" on page 2-8.
2. Flip the power switch to the Off position.

 **Warning:** Failure to turn off the machine can result in personal injury or damage to equipment.

To access the Ethernet board, you must remove the hopper drawer.

Removing the Hopper Drawer

Refer to "Removing the Hopper Drawer" on page 2-9.

Removing the Ethernet Board from the Bracket

To remove the Ethernet board, refer to Figure 12-12 on page 12-38 and perform the following steps:

1. Open the electronics box door. Refer to "Opening the Electronics Box Door" on page 2-11.
2. Remove the second screw from the left on the bracket.
3. Loosen the board from the bracket by gently wiggling it.
4. Pull the board straight out of its bus slot in the motherboard.
5. Allow the board to hang from its cable so you have access to the Ethernet connector on the top of the board.
6. Push in the flanges on the connector and remove the connector from the board.

Installing the Ethernet Board

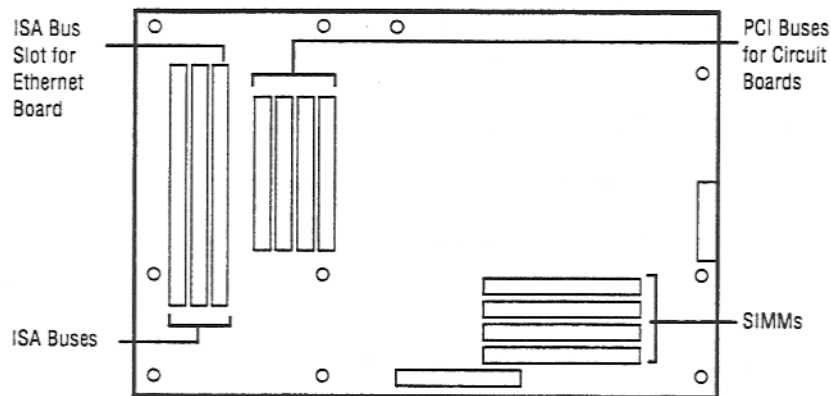
Install the Ethernet board and then the hopper drawer.

Installing the Ethernet Board in the Bracket

To install the Ethernet board in the bracket, perform the following steps:

1. Plug the connector for the Ethernet board into the top of the board.
2. Insert the teeth of the board between the connector pins in the ISA bus slot closest to the circuit boards. Figure 12-13 shows the location on the motherboard.

Figure 12-13 Location for Ethernet Board



3. Push the board into the slot until it is secure.
4. Secure the board to the bracket with a screw in the screw hole second from the left on the bracket.
5. Close the electronics box door. Refer to "Closing the Electronics Box Door" on page 2-12

Installing the Hopper Drawer

Refer to "Installing the Hopper Drawer" on page 2-10.