

MASTERCOM

250

User's Guide



MASTERCAM 250 User's Guide



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FCC Statement

This device complies with Part 15, Subpart J, of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This device has been tested and found to comply with the limits of a Class A computing device.

Accessory: The accessory associated with this equipment is:

- A metal cabinet

This accessory is required to be used in order to ensure compliance with FCC rules. It is the responsibility of the user to provide and use this accessory. The metal cabinet can be provided by mounting the GMU inside a slot machine cabinet.

Caution to the user: The Federal Communications Commission warns the users that changes or modifications of the unit not expressly approved by the party responsible for compliance could void the users' authority to operate the equipment.

To comply with the limits for an FCC Class A computing device, always use the metal cabinet with this unit.

Acronyms Used in this Guide

- CIU **C**omputer **I**nterface **U**nit
- DMK **D**isplay, **M**agnetic Card Reader, **K**eypad unit
- EPI **E**nhanced **P**layer **I**nterface
- EPROM **E**rasable **P**rogrammable **R**ead-**O**nly **M**emory
- GMU **G**ame **M**onitoring **U**nit — such as the MASTERCOM 250
- MASTERCOM **M**aintenance, **A**ccounting, **S**ecurity **T**racking **E**vent **R**ecorder **C**OMmunicator
- MC250 **M**ASTERCOM **250**
- MPU Slot machine's **M**icro**P**rocessor **U**nit
- SDS **S**lot **D**ata **S**ystem
- XC **E**Xception **C**ode

MASTERCOM 250 User's Guide

Bally Systems MASTERCOM 250 User's Guide
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MASTERCOM 250 Installation

**Chapter 1 – MASTERCOM 250 Features****Overview**

This chapter describes the various features and requirements for installing a MASTERCOM 250 (MC250).

The features available to you depend on the version of MC250 code you have installed. Contact your Bally Systems Sales Representative for more information on any of the features mentioned in this document.

The MC250 functions with SDS release 7.1+, supporting the following.

- Directed Messages
- Request for Player Information (Bonus Point Lookup)
- Player Win Meter
- Extended A1 Messages (including multigame support)
- Enhanced Player Marketing Messages
- Conditional Directed Messages
- First GMU Options sent in response to GMU power-up
- Bally eTICKET (SDS release 8.0+)
- Bally eCASH (SDS release 8.2+)
- Bally eCOUPON (SDS release 8.2+)

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MASTERCOM 250 Components

FLASH ROM

The MC250's FLASH ROM has up to 512K of reprogrammable program memory. The FLASH ROM can be reprogrammed from most prom burners by Bally Systems field service personnel. The FLASH ROM is socket-mounted for easy replacement. If your jurisdiction requires One-Time Programmable (OTP) FLASH ROM, an adapter kit is available (P/N K-OTP-KIT).

RAM

You'll find the MC250's 32K of RAM provides effective and concurrent communication with the user interface, the game, and SDS.

Non-Volatile Storage

The MC250 comes with 8K of non-volatile RAM storage.

EPI Driver

The MC250 comes with a built-in EPI driver, so you can access Bally Systems EPI (Enhanced Player Interface) features directly, without the need for a special converter board. The EPI exchanges information between the player or employee at the slot machine and SDS, information that your Casino Management System (CMS) can then employ in player marketing.

The EPI contains the basic tracking components needed for each slot machine — magnetic card reader, LCD display, and keypad — with room to mix and match optional plug-in components like icon buttons, dancing lights, relays, or an employee SKEY. Players can receive instructions and information, and request services like change, beverages, or assistance. Employees can use the EPI for security, test, and maintenance duties.

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Box Mount

Another feature of the MC250 is the steel box mount for added security and ease of maintenance. The bottom of the box attaches to the machine while the box “lid” holds the MC250 circuit board. The unit can be secured with the built-in lock-through tab. The box also preserves the board’s mechanical integrity by shielding it from debris and insulating the board from ESD (Electrostatic Discharge) interference and EMI (Electromagnetic Interference). Quick access for maintenance is another box bonus. There’s no need to unscrew the board from the machine for repair. The lid, with the MC250 board attached, slides out easily, leaving the rest of the box in place. When the repair is complete, simply slide the board back on. A switch is also available for the MC250 box mount. This switch offers tamper detection by sending a message to SDS whenever the MC250 box is opened.

Microcontroller

The microcontroller is the main processor for the board. It runs at 12MHz with a capacity for speeds up to 33MHz. Features include:

- 128 bytes of internal RAM
- 8-bit CPU optimized for control applications
- Extensive Boolean processing (single-bit logic) capabilities
- 32 bi-directional and individually addressed I/O lines
- Two 16-bit timer-counters
- Full Dual Universal Asynchronous Receiver-Transmitter (DUART)
- 6-source, 5-vector interrupt structure with two priority levels

DUART

The DUART is the communications link to SDS and the game. A crystal controls the DUART’s communications baud with great accuracy. The microcontroller can set the baud of each channel. The MC250 comes fully compliant with the industry standard RS-232 interface, providing true RS-232 signaling to the game and to the auxiliary port.

Modular Connectors

The molex cables of previous MASTERCOM versions have been replaced by modular jacks and connectors for plug-and-go set-up. All connections are keyed, polarized, and locking.

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Status Lights

Four status lights on the front of the MC250 box allow easy troubleshooting. At one glance, you can check for power, game receive, system transmit and system receive functions. These provide the essential elements of a slotline tester right on the MC250's faceplate.

The Slotline Transmit light (ST) turns red when information is transmitted to the slotline. The Game Receive light (GR) turns red when information is received from a game. The Power light (P) turns green when power is on. The Slotline Receive light (SR) turns bright red when there is no connection from the system to the GMU. When the system is polling and connecting to the GMU, the SR light is a dim red. When there is a connection to the GMU but no polling is occurring, the SR light is dark.

Cable- and Expansion-Readiness

The MC250 comes RJ45 cable-ready, meeting EIA568A wiring standards. It's also expandable, with two serial ports and bus-oriented input/output lines.

Replaceable EPI Bus Fuse

To protect the EPI bus power from inadvertent shorts, the EPI bus power line has been fused. The EPI bus fuse can be replaced with a 1-amp, 250-volt, 5x20-mm fuse.

Bally ePRINTER

The Bally ePRINTER allows a voucher printer to be integrated into SDS and attached to older slot machines. Instead of replacing the slot machines on your floor, the Bally ePRINTER actually turns your older machines into machines that can print tickets.

With the Bally ePRINTER, messages go from the GMU or your Player Tracking system to the ePRINTER directly, avoiding the slot machine altogether. The ePRINTER attaches to a Bally Systems Peripheral Interface Board (PIB). The PIB translates the printer messages going from the EPI to SDS into the printer's native language. (The Bally ePRINTER currently supports IGT S+ games, and the Ithaca ticket printer.)

MASTERCOM 250 Installation

MASTERCOM 250 Features

- 8K non-volatile memory
- Integral EPI driver
- Protective box
- ESD protection circuitry
- Full RS-232 compliant game interface
- Modular connectors
- CE certified
- IEC1000 static zap tested
- UL22A gaming device approval
- Bally ePRINTER

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Chapter 2 – MASTERCOM 250 Installation

Installation

Where you mount the MC250 board varies depending on the type of slot machine. You'll get the most use out of your MC250 if you mount it so the front of the unit is visible. This offers the best view of the board's status lights, making for easier troubleshooting.

1. If the game is MASTERCOM-ready, attach the bottom of the MC250 box to the MASTERCOM mounting bracket through the oval slits. If the game is not MASTERCOM-ready, drill holes in the cabinet and mount the box through the round holes.
2. Slide the lid, with the MC250 board attached, onto the box and secure with screws. If desired, seal the locking tab.
3. Plug one end of the game interface harness to **Game** on the MC250. Attach the other end to the game. Depending on the game, you may need to attach a second connector at **Aux Game**.
4. Plug the comm line into the MC250 at **Slotline**.
5. Be sure the MC250's power source is separate from the slot machine's power source. Plug the line from the power supply in at **Power**.

MASTERCOM 250 Installation

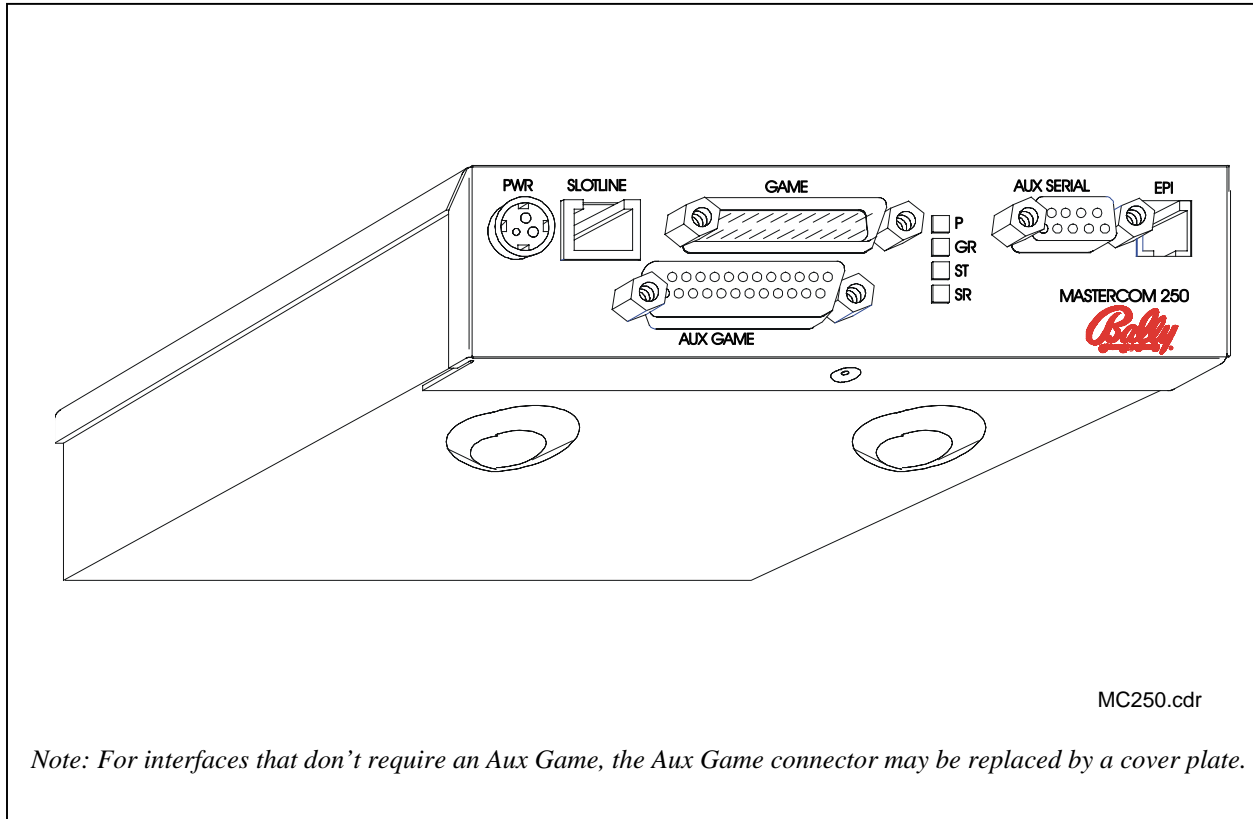


Figure 2-1. MASTERCOM 250 Front

MASTERCOM 250 Installation

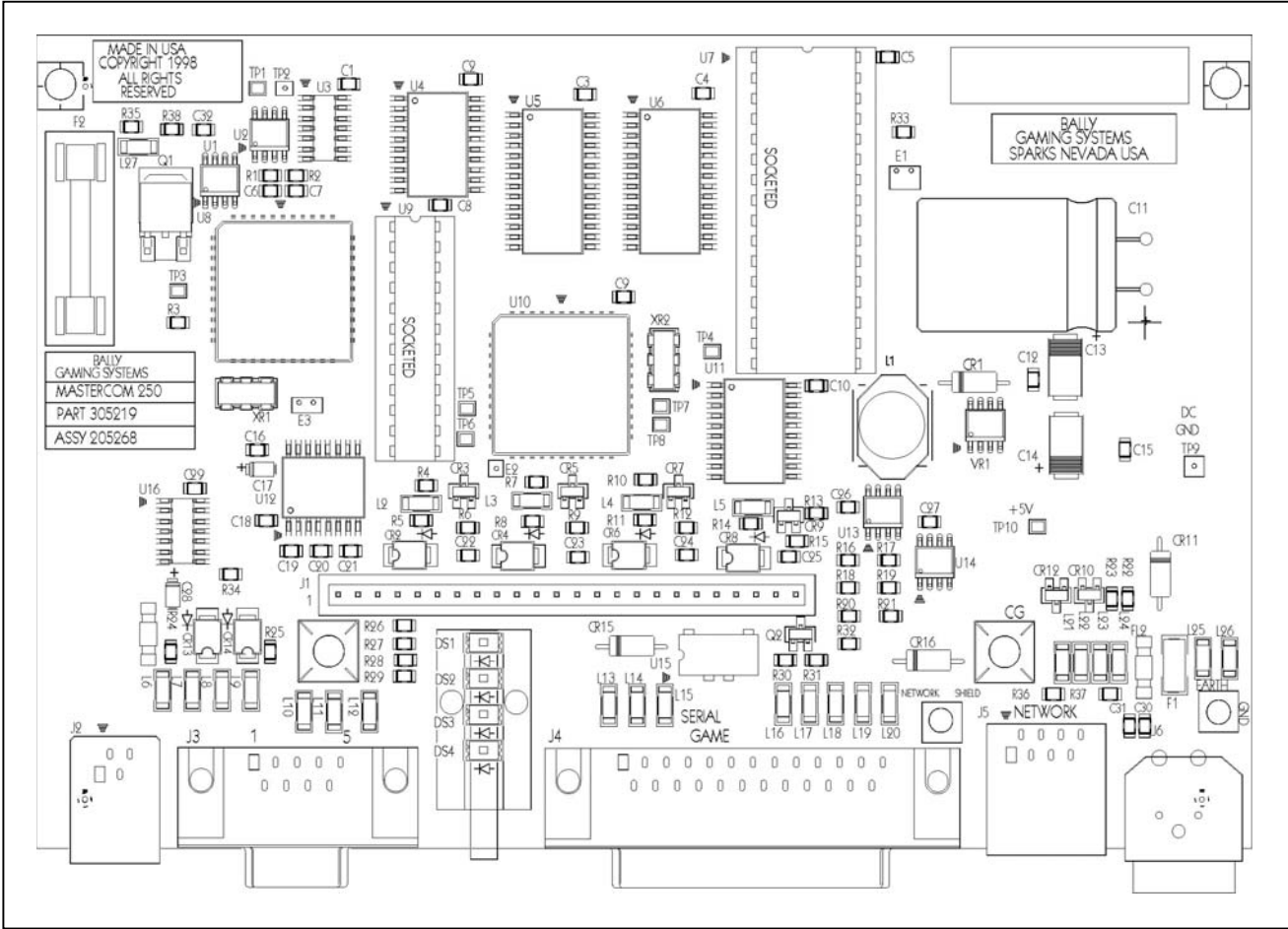


Figure 2-2. MASTERCOM 250 Board

MASTERCOM 250 Installation

Connector Pinouts for the Bally I/O Piggyback

Auxiliary Game/J1 25 Pin Female Panduit

Pin	Name
9	Coin In
10	Ground
11	Diverter
12	Ground
17	End Bet
18	Ground
21	Spare
22	Ground

Game/J4 Male 25 Plug

Pin	Name
2	Transmit
3	Receive
7	Ground
9	Slot Door
10	Ground
11	Drop Door
12	Ground
15	Lockout
16	Lockout
17	Cash Box
18	Ground
21	Aux Fill
22	Ground
25	Blackout

Power/J6 DIN Power Jack

Pin	Name
1	+9V
2	DC Ground
3	NC

RJ-45 Slotline/EIA568-A

Pin	Name
3	Receive +
4	Transmit -
5	Transmit +
6	Receive -

MASTERCOM 250 Installation

Powering the GMU Up or Down

Occasionally, a GMU must be powered down. The GMU should always be powered down whenever the GMU's firmware is changed, any time the GMU needs to be reparameterized, or when obvious malfunctions exist, such as a corrupted scrolling message on the EPI.

A GMU should never be powered down when a game is being played, or during unstable power conditions, such as lightening strikes.

1. To power down the GMU, unplug the power cable from the PWR slot, as shown.

PWR Slot

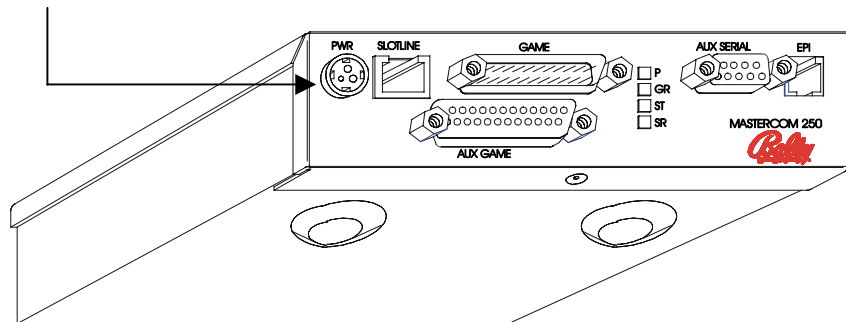


Figure 2-3. GMU Power Slot

2. Power up the GMU by inserting the power cable back into the PWR slot.

After a reboot, if the GMU supports tickets, the GMU asks for ticket parameters, and performs a security key exchange. It sends an XC56, "GMU Power Up," message. The GMU may also send an XC172/AC, "Game Communication Lost," message followed by an XC173/AD, "Game Communication Restored," message.

If the GMU does not support ticketing or freeform messages, it simply sends an XC56, "GMU Power Up," message.

MASTERCOM 250 User Interface

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MASTERCOM 250 User Interface



Chapter 3 – MASTERCOM 250 User Interface

Overview

Players and employees can interact with the slot machine and SDS through a user interface mounted on the machine. This interface may incorporate a minimum of devices including:

- An LCD or VFD that displays messages (upper and lower case)
- A magnetic card reader that identifies the player or employee by information encoded on a card
- A keypad that allows the player or employee to request information or service

The MC250 comes with a built-in driver for the Bally Systems EPI (Enhanced Player Interface).

Enhanced Player Interface (EPI)

The standard EPI functions are compatible with SDS Release 7.1+. All EPI components are standalone devices that can be connected via a telephone-type modular cord. You select the components as needed.

A typical EPI configuration consists of:

- A flush faceplate incorporated into the fascia panel of a slot machine
- 2x16 or 2x20 line display
- 2x6 elastomeric keypad (comes as an assembly)
- Magnetic card reader

Optional “plug and play” kits include:

- Icon buttons for change, cocktails, service or any special requests implemented by the casino
- Programmable LED dancing lights that frame the card reader slot (See the *Send a Message to a Slot* menu option document for more information)
- An SKEY, rather than an employee card, for access to the machine
- Relay board

MASTERCOM 250 User Interface

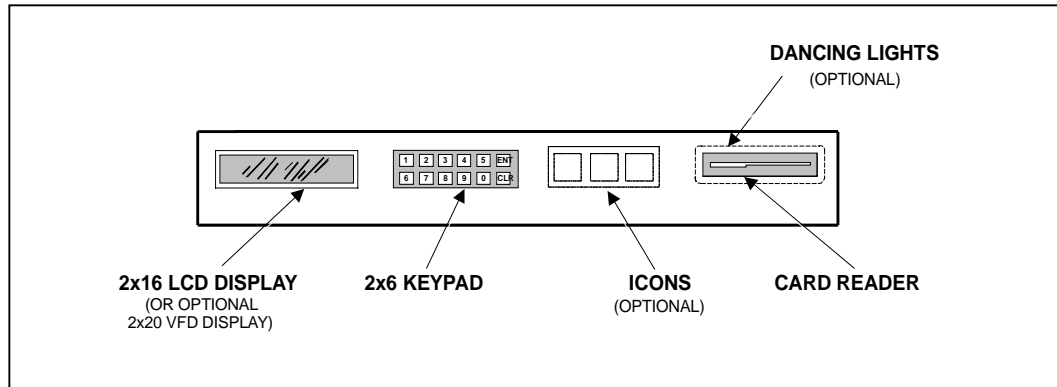


Figure 3-1. Typical Enhanced Player Interface (EPI) Unit

EPI Installation

1. Each EPI component has two generic communication jacks that can serve as either input or output. Connect one end of a “phone line” cable to the EPI jack on the MC250 board.
2. Plug the other end of the cable into an open jack on any of the components on the back of the EPI.
3. Start a daisy chain, plugging one end of another “phone line” cable into the open “output” jack of the component that is connected to the MASTERCOM. Plug the other end into a jack on a neighboring EPI component. Continue to daisy chain the remaining EPI components together. The total cable length should not exceed 12 feet.

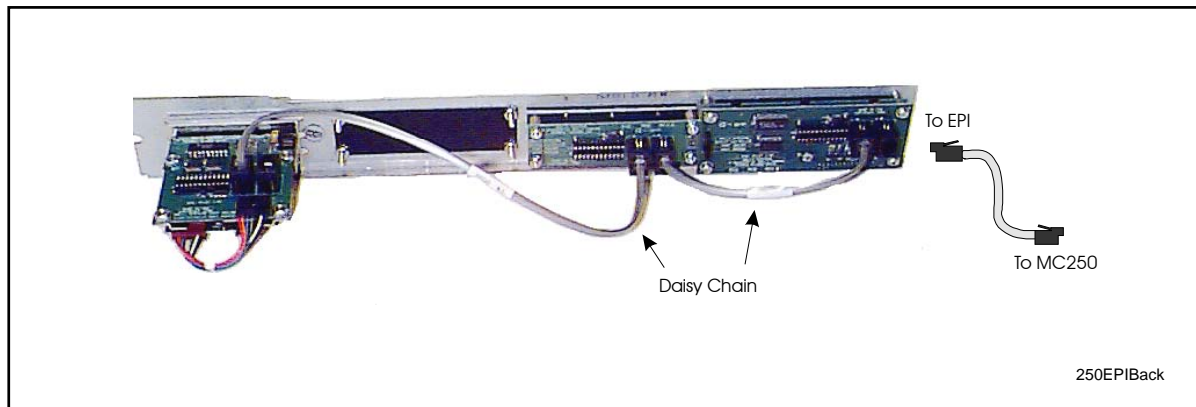


Figure 3-2. EPI to MC250

MASTERCOM 250 User Interface

EPI Grand

EPI Grand incorporates all the features of the EPI in a self-contained unit. This compact design increases your EPI placement options — you can attach your EPI Grand on the side of the slot machine, on the top of the slot machine, or on the bar top.

EPI Grand offers several devices as standard features. All are connected by telephone-type modular cord and jacks. The EPI Grand features:

- A display with two lines of 20 VFD characters
- A magnetic card reader framed with dancing lights of yellow, green, and red
- A keypad in a 2x6 layout (two rows of six keys each)

Options include:

- Icon buttons (If you choose not to use the icon buttons, you can use the icon area to display your casino logo for a custom look.)
- A top mount case, allowing you to attach your EPI Grand to a bar top machine
- A side mount case for upright slots or replacing a DMK

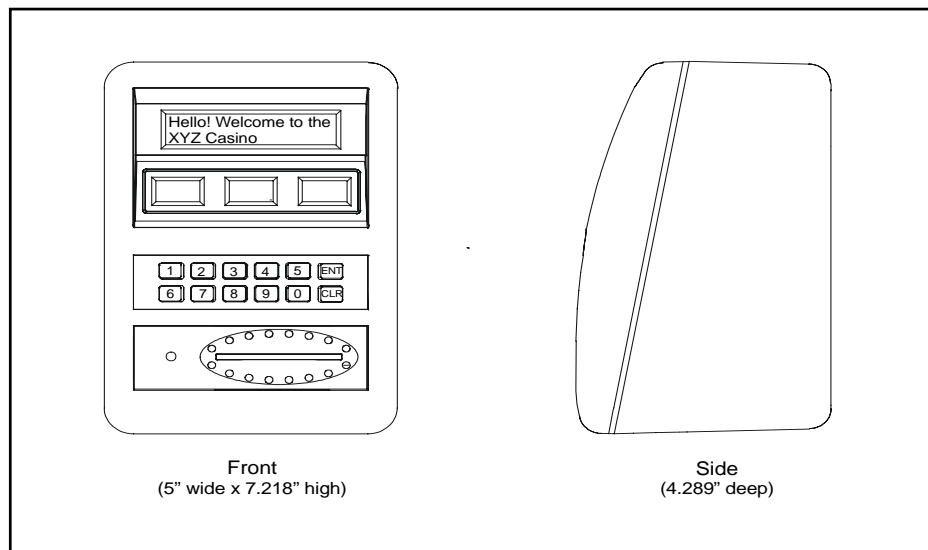


Figure 3-3. EPI Grand

MASTERCOM 250 User Interface

EPI Grand Installation

1. Remove the EPI Grand panel assembly from the case.
2. Using the instructions provided, attach the case to the top or side of the slot machine. The EPI Grand case is smaller than the DMK product and care is required to cover the DMK mounting holes.

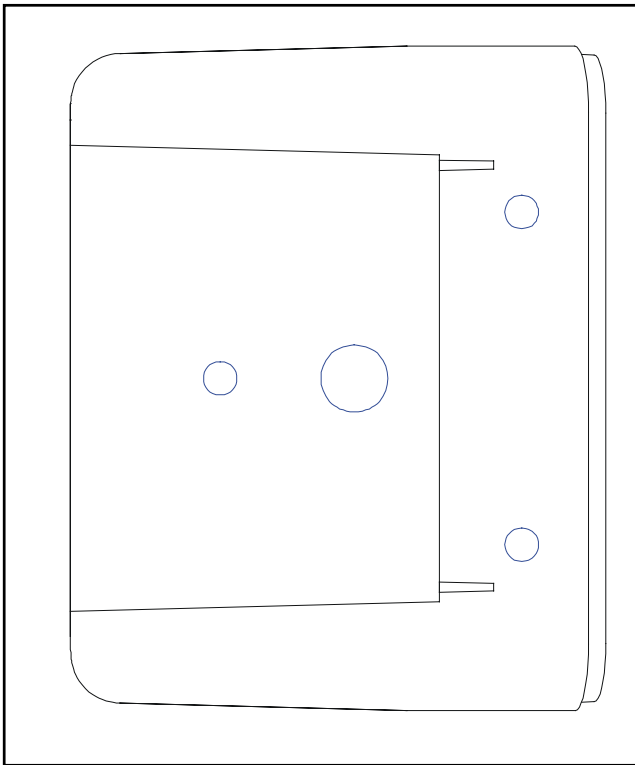


Figure 3-4. EPI Grand Case, Bottom View

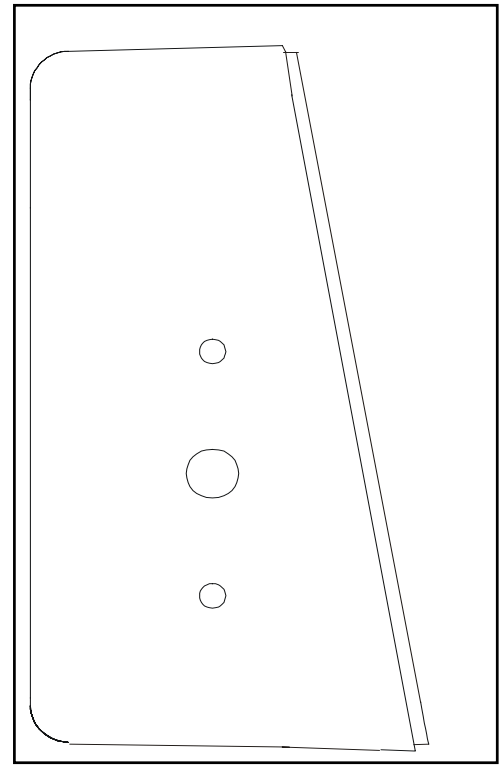


Figure 3-5. EPI Grand Case, Side View

User Interface Keypad Functions

3. The ground wire assembly (p/n 205451 for side mount, p/n 205461 for top mount) provides ground to the EPI Grand panel and lock cylinder through the mounting screw to the machine. If you do not get a good ground, you must add a ground strap (p/n 205336) connecting the grounding screw to a good machine ground.
4. Attach one end of an EPI cable with two ferrites (p/n 205293) to the MC250 EPI jack. On the other end, open the ferrite and remove the cable. Thread the end of the cable into the EPI Grand case through the large hole. Place the cable back in the ferrite and wrap the end of the cable around the ferrite five times. Snap the ferrite closed.
5. Plug the EPI cable into one of the open EPI jacks in the EPI Grand panel assembly.
6. Ground the EPI panel assembly by connecting the quick connect ground connector.
7. Attach the panel assembly to the case by first inserting the hinge cam bracket on the bottom part of the panel assembly into the rectangular slots in the bottom of case. Be sure both prongs on the bracket go through the slots.
8. Tilt the rest of the panel assembly into place and lock.

User Interface Keypad Functions

DMK to EPI (D2E) Controller Interface

Users of Bally Systems DMK (Display, Magnetic card reader, Keypad) user interface can also access the MC250's EPI features by using a DMK to EPI (D2E) Controller Interface. The D2E Controller Interface attaches to the DMK, allowing the slot machine to have certain capabilities that normally only become available with the installation of an EPI.

Note: The D2E Controller Interface must be at least A906953C or higher. The EPI Converter Board (Assy. 205219) must include p/n 28-8752-C02 in socket U5. The 220C board (Assy. 205144) must include p/n 26-0208-01 in socket U6.

D2E Controller Interface Installation

Note: Some DMK 906417 boards have 4.7k Ω RP3s instead of 47k Ω RP3s.

All DMK 906417s

1. Use the D2E Controller Interface with keypad firmware 906984.
2. Remove the U4 microprocessor from the DMK.
3. For 906417s with 4.7k ohm RP3s, cut out SIP resistor RP3.

Proceed with Step Four below

All other DMKs

1. Use the D2E Controller Interface with keypad firmware 906985.
2. Remove the U4 microprocessor from the DMK.
3. Cut out SIP resistors RP2 and RP3.
4. Install the D2E Controller Interface into the DMK's U4 slot, being careful to match at Pin 1 to Pin 1.
5. Attach cable 205368 to the DMK MASTERCOM connector at one end and the D2E Controller Interface's J3 connector. The cable's key goes to the inside of the board on the DMK. The key may need to be clipped off on some DMKs.
6. Snake a tie wrap underneath the DMK's U4 socket, loop it over the D2E Controller Interface and tighten to secure the D2E Controller Interface to the DMK.

User Interface Keypad Functions

7. Connect one end of a “phone line” cable to the EPI jack on the MC250.
8. If you have additional EPI components, start a daisy chain, plugging one end of another “phone line” cable into the open “output” jack of the component that is connected to the MASTERCOM. Plug the other end into a jack on a neighboring EPI component. Continue to daisy chain the remaining EPI components together.
9. Plug the other end of the cable into the jack on the back of the D2E Controller Interface.

MC250 to IGT Interface Assembly

The Serial Interface Level Converter (SILC2) Assembly allows IGT S+ and Players’ Edge slot machines to communicate with Bally MASTERCOM 250-series GMUs. The SILC2 is required between the MC250 and IGT S+ and Players’ Edge serial slots. SILC2 installation requires a standard IGT serial harness, p/n 205323.

MC250 to IGT Interface Assembly Installation

1. Mount the SILC2 to the IGT slot machine. If the machine is an S+, the bracket is designed to be mounted to two of the four lugs found at the very rear of the game’s cabinet. Players’ Edge machines do not contain the lugs, so use your discretion.
2. Soldered to the SILC2 is a harness containing two plugs. Connect the 15-Pin, single row and 10-Pin, dual row plugs to the 15-Pin, single row and 10-Pin, dual row connectors on the IGT motherboard.
3. Connect the DB25 plug of the 205323 serial harness to the MC250’s Game port. Attach the 4-pin plug at the end of the 205323 harness to the J1 4-pin connector on the SILC2 board.

User Interface Keypad Functions

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User Interface Keypad Functions

Chapter 4 – User Interface Keypad Functions

Overview

This chapter describes the numerous customer or employee keypad functions available with the MC250.

Customer Keypad Functions

Once a customer inserts a card into the machine’s card reader, four function keys become available: Service Request, Change Request, Beverage Request, and Customer Inquiry.

Press Key #	Function	Exception Code to SDS	EPI Displays	Supported in SDS			
				7.1	8.0	8.1	8.2
N/A	Card n Response	77*	<i>Player Response</i>	✓	✓	✓	✓
		39	<i>Message</i>	✓	✓	✓	✓
1	Service Request	04	SERVICE	✓	✓	✓	✓
2	Change Request	21	CHANGE	✓	✓	✓	✓
3	Beverage Request	22	BEVERAGE	✓	✓	✓	✓
5	Customer Inquiry	A0 (HEX)	<i>Casino’s Promotional Message</i>	✓	✓	✓	✓

* 77 is the standard Card-In exception code; 39 is the Card-In exception code for enhanced player marketing features.

Once a button is pressed, the message is sent during a specified timeout interval. The timeout interval is one of the options programmed in the FLASH ROM on the MC250.

The message remains displayed until the:

- CLR key is pressed
- card is removed
- card is considered abandoned

User Interface Keypad Functions

Employee Keypad Functions

An employee can access keyboard functions by inserting a valid, signed-on card into the machine's card reader or by inserting an SKEY into the SKEY socket inside the machine. These function keys can be used to:

- Change the MC250 communication address
- View the game-specific personality
- Enter test mode
- Call for emergency help
- Reserve a machine for a specific customer

The normal sequence of events is:

1. Insert an employee card into the magnetic card reader or insert an SKEY. If there is a problem with the card, the user interface displays NO DATA, REINSERT, or INVALID.
2. One or more of the following game status messages appear on the top line of the two-line display.
3. When the system acknowledges the card, the display shows MODE 00, employee keypad prompt.

Game Status Messages

If the system is down, you may see a LINE IS DOWN message and a series of blinking asterisks on line two. Press any key to go directly to MODE 00. It takes about two minutes to detect a down line.

Message Displayed	Explanation
STANDBY	Waiting for a system poll
TRANSMIT	Waiting for a system reply
GMU ID XX	The GMU's communication address
LAST XC XX	The last acknowledged exception code sent to the CIU
BET XXXX	The amount bet in the last game
PAY XXXX	The amount paid or collected in the last game
BILL XXXX	Denomination of the last bill accepted (or NO VEND if no bills accepted)
or	<i>Or</i>
COUPON VEND	The last transaction in the bill acceptor was a bar-coded coupon
CHANGE XXXX	The number of coins changed for the last bill accepted

User Interface Keypad Functions

Responses to the MODE 00 Prompt

At the MODE 00 prompt, select other employee function modes by:

1. Pressing the digits (0 - 9) for the function you need.
2. Press **ENT**. Depending on the mode you select, the MC250 either goes directly into the requested mode or sends a message to the system for approval.

You exit MODE 00 by removing either the employee card from the magnetic card reader or removing the employee SKEY. The display returns to the casino's attract message.

The following table summarizes the employee modes available. Each is described in detail in the next section.

User Interface Keypad Functions

Employee Function Modes

Mode	Press Key(s)	Function	Exception Code to SDS	EPI Displays	Supported in SDS			
					7.1	8.0	8.1	8.2
00	ENT	Auto-scroll through HELP Menu	N/A	<i>Modes and functions scroll across the display</i>	Not Applicable			
99								
01	1	Show Game-Specific Personality	N/A	GMU ID YY	Not Applicable			
02	2	Change the GMU Address	XC25	ADDR YY XXXX or ADDR UNCH'D	✓	✓	✓	✓
03	3	Enter Test Mode	N/A	TEST MODE	Not Applicable			
04	4	Reserve a slot machine for a specific customer	XC23	a) RESERVED or b) NO RESERVE or c) MSG FAILED	✓	✓	✓	✓
05	5	DMK Service Code	XC99	ENTER THE SERVICE CODE 0-99 and 00 ENDS MODE	✓	✓	✓	✓
12	12	Indicate the hopper needs a fill	XC29	a) MSG RECD or b) MSG NACKD or c) MSG FAILED	✓	✓	✓	✓
13	13	Choose system printer for directed DMK fill	XC07	a) MSG RECD or b) MSG NACKD or c) MSG FAILED and ENTER WHERE TO PRINT FILL SLIP	✓	✓	✓	✓
20	20	View various accounting meters	N/A	<i>Scrolls through 12 meters</i>	Not Applicable			
55	55	View GMU program "events" (<i>Bally Systems test function</i>)	N/A	EVENT MODE	Not Applicable			
56	56	Zero all meters in the GMU (<i>Use with extreme caution</i>)	(request) XC25 (accepted) XC98	a) DENIED or b) MSG FAILED or c) METERS 0ed	✓	✓	✓	✓
58	58	Step through debug meters (<i>Bally Systems test function</i>)	N/A	Series of variables at the debug meter	✓	✓	✓	✓
63	63	Display ticketing and redemption errors	N/A	Ticketing and redemption errors		✓	✓	✓
64	64	Display GMU code authentication	N/A	GMU authentication data		✓	✓	✓
70	70	Display eCASH transactions and clear errors.	N/A	eCASH transactions and errors			✓	✓
89	89	View the contents of address space	N/A	ENTER ADDRESS	✓	✓	✓	✓
91	91	Employee needs assistance	XC24	a) HELP COMES or b) MSG NACKD or c) MSG FAILED	✓	✓	✓	✓

User Interface Keypad Functions

MODE Instruction Details

MODE 00 and 99 – Scroll Through Help Menu

1. Press **ENT** while in MODE 00 or MODE 99 to list the employee functions available.
2. Press **CLR** at any time to return to the MODE 00 or MODE 99 prompt.

MODE 01 - Show Game-Specific Personality

The Game-Specific Personality is a list of parameters containing coin type, jackpot information, and other characteristics that vary from one slot machine to another. After selecting this mode:

1. Press **ENT** to move *forward* through the list of parameters.
2. Press **CLR** and **ENT** simultaneously to move *backward* through the list.
3. To EXIT this mode, press **ENT** at the last field item, or remove your card from the card reader or remove your SKEY.

Game-Specific Personality Parameters include:

Display		Explanation
GMU ID	XX	MASTERCAM 250 address for this machine
ID	XXXXXXXX	Personality ID programmed in MC250's FLASH ROM, sent to the system as the EPROM ID.
DOC	XXXXXXXX	Bally Systems document control number with revision information
DENOM	\$XXX.XX	Machine's denomination as set in the GMU
MAX COIN	XXX	Maximum bet for this machine as set in the GMU
MP JP	XXXXX	Maximum coin pay before reporting a machine-paid jackpot (XC63)
PROG TABLE	XX	Progressive table numbers for this machine

User Interface Keypad Functions

MODE 02 - Change MASTERCOM 250 Address

This mode allows authorized employees to change the GMU's address if the GMU already has a valid address assigned. A valid address is any address between 05 and EF. If you type an invalid address, it is ignored by the system and the current address remains in effect.

System authorization is set through the SDS Employee Function File Maintenance menu job description option "Change GMU." Typically, only slot technicians and senior slot technicians have this authority.

If the system doesn't authorize the address change, the message ADR UNCHNGD momentarily flashes on the user interface, followed by the MODE 00 prompt.

If the system authorizes the change, you see the current address:

ADDR YY	XXXX
---------	------

YY represents the current HEX address. To change the address:

1. Type a four-digit number. As you type each pair of digits (XX), the number is converted into a one-digit (Y) HEX value. Refer to the table shown below for the decimal-to-HEX conversion values.
2. Press **ENT** to save the new address. This change request is sent to the system for authorization. If approved, the user interface momentarily displays:

NEW ADDR	=	YY
----------	---	----

3. The user interface then re-displays the MODE 00 prompt.

HEX Conversion Codes

HEX	Keypad Entry	HEX	Keypad Entry
0	00	8	08
1	01	9	09
2	02	A	10
3	03	B	11
4	04	C	12
5	05	D	13
6	06	E	14
7	07	F	15

User Interface Keypad Functions

You cannot get authorization for an address change if the system is down or the MC250 is not receiving polls from the system. In such a situation:

1. Remove the slotline
2. Power the MC250 Off and On
3. Insert your employee card or SKEY
4. Press any key to display the MODE 00 prompt
5. Select MODE 02

This procedure lets you change the address without system approval. However, the MC250 must recognize a Line Down condition to allow this address change. A wait of two minutes is required for the system to recognize a Line Down and the MC250 to see any electrical activity on the slotline as possible valid polling signals. To create a Line Down condition, pull the slotline connector from the MC250.

When a new board is installed, the external EPROM (where the address) is stored is zeroed out. A flashing UNCONFIGURED indicates an invalid address. In this situation, you also can enter an address without system authorization. There is no need to create a Line Down condition.

Examples - Changing a MASTERCAM 250 Address

Example 1 - Changing an address to 08

1. Select MODE 02 by pressing **2**.
2. Press **CLR** to display the address input prompt:

ADDR	00 0000
------	---------

3. Type **0008**.
4. The user interface displays 08 (HEX value) and 0008 (the decimal equivalent):

ADDR	08 0008
------	---------

5. Press **ENT** to store the new address.
6. The user interface momentarily displays the new HEX address 08:

NEW ADDR	=	08
----------	---	----

7. The user interface redisplay the MODE 00 prompt.

User Interface Keypad Functions

Example 2 - Changing an address to AC

1. Select **MODE 02** by pressing **2**.
2. Press **CLR** to display the address input prompt:

ADDR	00	0000
------	----	------

3. Type **1012** (the 10 converts to A and the 12 converts to C).
4. The user interface displays AC (HEX value) and 1012 (the decimal equivalent):

ADDR	AC	1012
------	----	------

5. Press **ENT** to store the new address.
6. The user interface momentarily displays the new HEX address AC:

NEW ADDR	=	AC
----------	---	----

7. The user interface redisplay the **MODE 00** prompt.

MODE 03 - Test Mode

This mode lets you view the MC250's inputs and game events (such as Coin In and Slot Door Open) as they occur.

When you select **MODE 03**, the user interface displays:

TEST MODE

As soon as the MC250 senses a specific change on one of its inputs, the display changes to indicate which input occurred. This new display scrolls across the screen, along with any other inputs sensed, then **TEST MODE** reappears until the next input occurs. If you press **CLR**, the MC250 immediately returns to the **MODE 00** prompt.

User Interface Keypad Functions

The following chart shows available MC250 inputs. The inputs you can test depend upon the type of machine.

Input Event	Display	Description
A game is played	HANDLE PULL	
A tilt condition occurs	<i>Tilt message</i>	Varies by machine type. See Technical Notes below.
A coin or credit is bet	COIN IN	
Coins drop to the coin tray	COIN OUT <i>or</i> WIN PAID	
Coins diverted to the drop bucket	COIN DROP	
Slot machine door is opened	SLOT OPENED XC71	
Slot machine door is closed	SLOT CLOSED XC72	
Drop door is opened	DROP OPENED	
Bill acceptor vends currency	\$xxx VEND	The xxx represents the face value of the bill vended. For example, \$20 VEND appears when the acceptor accepts a \$20 bill.
Slot machine loses power	BLACKOUT XC62	
Power is restored	XCAB	
Electronics door is opened	ELECT DOOR	The electronics door accesses the machine's MPU
Game hits a progressive jackpot	LINK	
Game hits a jackpot	JACKPOT	Flashes XC10, then alternates with JP Amount
Exception Code transmitted to system	XCxx	

User Interface Keypad Functions

MODE 04 - Reserve Game

This mode lets you reserve a slot machine for a specific customer.

Depending upon the machine model and jurisdictional requirements, a 4-pole lockout board may be required to implement this function.

1. After an employee card or SKEY is accepted, select Mode 04 to activate the game's Coin In lockout switch. Credits on the machine should be collected because the reserve function is a Coin lockout, not a Credit lockout.
2. The user interface displays:

RESERVED

The game is locked out until either any employee card or the last customer's card is inserted into the card reader, an employee inserts an SKEY, or a specified time interval* has elapsed since the game was reserved. The MASTERCOM 250 releases the Coin In lockout and resumes normal operation.

** This time interval is one of the options programmed in the FLASH ROM on the MC250.*

If the reserve function is not available, the user interface displays:

NO RESERVE

or, the user interface displays:

MSG FAILED

User Interface Keypad Functions

MODE 05 – DMK Service Code

This mode allows employees to enter DMK Service Codes. Service Codes are user-defined codes designed to specify parts that have been replaced in a slot machine. The mechanic simply inputs into the DMK/EPI device the Service Code number that best describes the work performed.

1. Select Mode 05 by pressing **5**. The User Interface displays:

ENTER THE SERVICE CODE 0-99
00 ENDS MODE

2. Enter the Service Code that corresponds with the work done on the slot machine. Both the Service Code and an Exception Code 99 are sent to SDS, and the information is stored in a data file until requested. The number of the specific Service Code displays on the DMK Service Code report, and on the CList report (when Exception Code 99 is requested).
3. Enter the next Service Code, or press **00** to return to the MODE 00 prompt. DMK Service Codes include:

DMK Service Code	Description
1	Coin Diverter Coil
2	Coin In Optic Board
3	Coin Comparitor
4	Coin Comparitor Harness
5	Connector Pins
6	Drop Door Switch
7	E86 Incandescent Bulb
8	F18T8 Fluorescent Bulb
9	Fluorescent Starter
10	Fuse
11	Handle Mech. Ratchet Spring
12	Hopper Agitator
13	Hopper Coin Deflector/Shim
14	Hopper Coin Wiper
15	Hopper Escalator Mounting Plate
16	Hopper Knife
17	Hopper Optic
18	Player Panel Button Switches
19	DMK Card Player Assy.
20	GMU
21	Test

User Interface Keypad Functions

MODE 12 - Hopper Fill Request

This mode indicates a game hopper needs to be filled.

If this request is successfully received by the system, the user interface displays:

MSG RECEIVED

If this hopper request message is not acknowledged by the system, the user interface displays:

MSG NACKD

or, the user interface displays:

MSG FAILED

User Interface Keypad Functions

MODE 13 – Directed DMK Fill

This mode allows employees to choose the printer where a fill slip is printed.

If this request is successfully received by the system, the user interface displays:

MSG RECEIVED

If this hopper request message is not acknowledged by the system, the user interface displays:

MSG NACKD

or the user interface displays:

MSG FAILED

1. When you select Mode 13, the user interface displays a prompt asking you to enter the system printer where you want the fill slip printed.
2. After you choose the system printer, the user interface redisplay the MODE 00 prompt.

User Interface Keypad Functions

MODE 20 - View Accounting Meters

This mode lets you view the various meters in the GMU.

When you choose MODE 20, the following options scroll across the user interface:

1=GMU, 2 = Acceptor, 3 = Ticket, 4 = eCASH
--

GMU

1. When you choose the GMU option under MODE 20, the user interface displays the number of Plays (handle pulls). For example, you see

Plays 00023

2. Press **ENT** again to see the count for Bets, Wins, Drops, and Total Drop.
3. Press **CLR** to return to MODE 20.

Acceptor

1. When you choose the Acceptor option under MODE 55, you see the total number of \$1 bills that have been inserted into the bill acceptor. For example, you see

\$1 bills 000023

2. Press **ENT** again to see the count for \$5 bills, \$10 bills, \$20 bills, \$50 bills, \$100 bills, Coupons, and Coins Vended.
3. Press **CLR** to return to MODE 20.

User Interface Keypad Functions

Ticket

1. When you choose the Ticket option under MODE 20, you see the dollar value of cashable tickets inserted into the bill acceptor. For example, you see

CashTktIn 000023

2. Press **ENT** to step through each of the ticket meters. They include:

Display	Explanation
CashTktIn XXXXXXXXXXXX	Dollar value of cashable tickets inserted into the bill acceptor
CashTktInCnt XXXXXXXXXXXX	Number of cashable tickets inserted into the bill acceptor
NonCashTktIn XXXXXXXXXXXX	Dollar value of non-cashable tickets inserted into the bill acceptor
NonCashTktInCnt XXXXXXXXXXXX	Number of non-cashable tickets inserted into the bill acceptor
CashTktOut XXXXXXXXXXXX	Dollar value of cashable tickets vended
CashTktOutCnt XXXXXXXXXXXX	Number of cashable tickets vended
NonCashTktOut XXXXXXXXXXXX	Dollar value of non-cashable tickets vended
NonCashTktOutCnt XXXXXXXXXXXX	Number of non-cashable tickets vended

3. Press **CLR** to return to the MODE 20 prompt.

User Interface Keypad Functions

eCASH

1. When you choose the eCASH option under MODE 20, you see the total dollar value of the cashable EFT withdrawn. For example, you see

CashEFTWthdrw 000000580

2. Press **ENT** to step through each of the eCASH meters. They include:

Display	Explanation
CashEFTWthdrw XXXXXXXXXXXXX	Dollar value of cashable EFT withdrawn
NonCashPEFTWthdrw XXXXXXXXXXXXX	Dollar value of non-cashable EFT withdrawn
CashEFTDpst XXXXXXXXXXXXX	Dollar value of cashable EFT deposited
NonCashPEFTDpst XXXXXXXXXXXXX	Dollar value of non-cashable promotional EFT deposited

3. Press **CLR** to return to the MODE 20 prompt.

User Interface Keypad Functions

MODE 55 - View Events (used by Bally Systems personnel for test and analysis)

When you choose MODE 55, the following options scroll across the user interface:

1 = Events, 2 = Debug Meters, 3 = Previous Events, 4 = Debug Text, 5 = View Memory, 10 = Resets

Events

1. When you choose the Events option under MODE 55, you see a list of 5-digit codes scroll across the user interface. These codes represent “events” of the program inside the MC250 that help Bally Systems engineers test and analyze new features.
2. Press **CLR** to return to MODE 55.

Event Codes

Event Code	Description	Event Code	Description	Event Code	Description
0	Nil	28	Tilt44	60	VendRamMal
1	AnyEvent	29	Tilt45	61	BillRejected
2	AllEvents	30	Tilt47	62	VendMalFixed
3	BetEvent	31	Tilt48	63	DeltaVend1
4	WinEvent	32	Tilt54	64	DeltaVend2
5	Jackpot	33	Tilt56	65	DeltaVend5
6	StartGame	34	Tilt59	66	DeltaVend10
7	EndBet	35	Tilt64	67	DeltaVend20
8	Blackout	36	Tilt80	68	DeltaVend50
9	Blackin	37	Tilt81	69	DeltaVend100
10	Reset	38	Tilt82	70	Tilt95
11	CoinDrops	39	Tilt83	71	RePoll
12	ChngLmpOn	40	Tilt84	72	CusCardReply
13	ChngLmpOff	41	Tilt85	73	AckReply
14	SlotDoorOpen	42	Tilt90	74	NakReply
15	SlotDoorClosed	43	Tilt93	75	HandpayReply
16	DropDoorOpen	44	Tilt94	76	Sports
17	DropDoorClosed	45	Vend1	77	Promo
18	FillDoorOpen	46	Vend2	78	SlotlineDown
19	FillDoorClosed	47	Vend5	79	SlotlineUp
20	ServiceOn	48	Vend10	80	PeriodicRequest
21	ServiceOff	49	Vend20	81	NetRxComplete
22	DeltaEndBet	50	Vend50	82	NetFailEvent
23	DenomChange	51	Vend100	83	XcOutGoing
24	Tilt30	52	VendDoorOpen	84	BadNetCmdError
25	Tilt41	53	VendDoorClosed	85	KeyPress

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User Interface Keypad Functions

Event Code	Description	Event Code	Description	Event Code	Description
26	Tilt42	54	VendCashOpen	86	KeyDown
27	Tilt43	55	VendCashClosed	87	KeyUp
88	NKeyEntry	98	AbandonedCard	129	DeltaPurchaseCoins
89	INKeyEntry	99	ReserveGame	130	GameComDown
90	CardIn	100	NScrollComplete	131	GameComUp
91	CardOut	101	GameRxStart	132	GamePowerReset
92	NetTxOverflow	102	PowerReset	133	DivMalfun
93	EmpCardIn	103	ParallelTransition	134	GameMPUReset
94	PlayerCardInA	104	RxBufOvfl	135	CancelledCreditEvent
95	EmpCardOut	105	JackpotEnd	136	BonusCmdEvent
96	PlayerCardOut	106	NetReset	137	JackpotAccepted
97	DmkRxComplete	107	DisplayReset	138	Tilt91
98	AbandonedCard	108	DeltaWinEvent	139	PlayerCardInB
99	ReserveGame	109	DeltaBetEvent	140	EmpCardRejected
100	NScrollComplete	110	DeltaCoinDrops	141	HotPlayerBezelOn
101	GameRxStart	111	VendCoins	142	HotPlayerBezelOff
102	PowerReset	112	GameMPUOut	143	EmployeeGone
103	ParallelTransition	113	GameMPUIn	144	RelayMessage
104	RxBufOvfl	114	EventChangeError	145	CheapTimerAbandoned
105	JackpotEnd	115	MallocError	146	EmployeeCardInitiated
106	NetReset	116	MPUDoorOpen	147	DelayAckReply
107	DisplayReset	117	MPUDoorClosed	148	PlayerInfoReply
108	DeltaWinEvent	118	GMUDoorOpen	149	ReserveEnd
109	DeltaBetEvent	119	GMUDoorClosed	150	CardNoData
110	DeltaCoinDrops	120	EPROMSigFail	151	TerminalPriorityRestored
111	VendCoins	121	SlotReset	152	TerminalPriorityError
112	GameMPUOut	122	LowRamBattery	153	ComputeCRC
113	GameMPUIn	123	NewGameSelect	154	LossLimitOpened
114	EventChangeError	124	GameDispComErr	155	LossLimitClosed
115	MallocError	125	TouchScreenFault	156	CreditVendEvent
116	MPUDoorOpen	126	CoinsCollectedEv	157	LossLimitDeadCard
117	MPUDoorClosed	127	DeltaCoinsCollectedEv	158	LockOutOn
118	GMUDoorOpen	128	PurchaseCoins	159	LockOutOff
119	GMUDoorClosed	129	DeltaPurchaseCoins	160	JackpotCancelled
88	NKeyEntry	130	GameComDown	161	AcceptorSWChange
89	INKeyEntry	120	EPROMSigFail	162	AcceptorSWChangeVerify
90	CardIn	121	SlotReset	163	StartCrc
91	CardOut	122	LowRamBattery	164	CrcDone
92	NetTxOverflow	123	NewGameSelect	165	GameComError
93	EmpCardIn	124	GameDispComErr	166	StartSystemQuery
94	PlayerCardInA	125	TouchScreenFault	167	SysMessageFailed

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User Interface Keypad Functions

Event Code	Description	Event Code	Description	Event Code	Description
95	EmpCardOut	126	CoinsCollectedEv	168	SysComRestored
96	PlayerCardOut	127	DeltaCoinsCollectedEv	169	EpiRelayReset
97	DmkRxComplete	128	PurchaseCoins	170-199	<i>Not Used</i>
200	GameEvent1	239	NetEPICommandTimer	406	FreeformMessage
201	GameEvent2	240	CardlessPlayTimeout	407	FreeformStart
202	GameEvent3	241	PlayerQueryTimeout	408	FreeformEnd
203	GameEvent4	242	EFTGameTimeout	409	FreeformResponse
204	GameEvent5	242	no_game_1S_timer	410-449	<i>Not Used</i>
205	GameEvent6	243	game_1S_timer_1	450	EpiDatagramFailure
206	GameEvent7	244	game_1S_timer_2	453	NetEPICommand
207	GameEvent8	245	game_1S_timer_3	454	EpiMessage
208	GameEvent9	246	game_1S_timer_4	455	PeripheralError
209	GameEvent10	247	game_1S_timer_5	456-599	<i>Not Used</i>
210	GameEvent11	248	game_1S_timer_6	600	EFT_RequestGameType
211	GameEvent12	249	game_1S_timer_7	601	EFT_GameTypeResponse
212	GameEvent13	250	game_1S_timer_8	602	EFT_Deposit
213	GameEvent14	251	game_1S_timer_9	603	EFT_DepositConfirm
214	GameEvent15	252	game_1S_timer_10	604	EFT_Withdrawal
215	GameEvent16	253	game_1S_timer_11	605	EFT_WithdrawalConfirm
216	GameEvent17	254	game_1S_timer_12	606	EFT_EndRequest
217	GameEvent22	255	game_1S_timer_13	607	TicketNumberRequest
218	GameEvent19	242	EFTGameTimeout	608	TicketNumber
219	GameEvent20	242	no_game_1S_timer	609	TicketPrinted
220	GameEvent21	243	game_1S_timer_1	610	PrinterFault
221	IndexOffset_1S_start	244	game_1S_timer_2	611	TicketRedemptionRequest
221	TicketRedeemTimer	245	game_1S_timer_3	612	TicketEFTTransfer
223	PlayerInfoTimeout	246	game_1S_timer_4	614	TicketPrintError
224	ChangeDelayTimeout	247	game_1S_timer_5	615	TicketMeterRequest
225	HPBetTimeOut	248	game_1S_timer_6	616	TicketMeter
226	HPMaxIdleTimeout	249	game_1S_timer_7	617	TicketUpdateComplete
227	PeriodicTimeout	250	game_1S_timer_8	618	JCMACK
228	ServiceIntervalTimeOut	251	game_1S_timer_9	619	JCMNAK
229	CocktailIntervalTimeOut	252	game_1S_timer_10	620	JCMPowerReset
230	AbandonedCardTimeOut	254	game_1S_timer_12	621	JCMCouponIn
231	LineDownTimeout	255	game_1S_timer_13	622	JCMTicketEFTTransfer
232	ServiceOffTimeout	256-399	<i>Not Used</i>	623	CouponCompletion
233	ReserveTimeOut	400	FreeformACKMessage	624	PPrintResult
234	ChangeIntervalTimeOut	401	SystemCommandEvent	625	PrinterReady
235	DoorOpenTimer	402	DecryptedSystemCommandEvent	626	PrinterError
236	BonusGoodForTimer	403	SecurityACK	627	FFPrintJobRxD
237	LossLimitTimeout	404	SecurityNAK	628	PrinterReset
238	CashlessTimeout	405	Secure	629	FocusCollectStarted

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User Interface Keypad Functions

Event Code	Description
630	FocusCoinsInserted
631	FocusCoinsCollected
632	FocusInsertCoinsReq
633	FocusReset
634	PrintTicketChange
635	EnableFocus
636	DisableFocus
637	TicketErrorMsg
638	TicketError2Msg
639	GameCancelledCoupon
640	TicketExpUpdate
641	TikGoodDataRxD
642	SysTicketsEnabled
643	SysTicketsDisabled
644	SysTicketsStatusQuery
645-699	<i>Not Used</i>
700	SystemAuthRequested
701	SystemAuthStatusQuery
702	SystemAuthenticationDone
703-899	<i>Not Used</i>
900	DBGCommandEvent
901	DebugDisplayEvent
902	DebugEvent2
903	DebugEvent3
904	DebugEvent4
905	DebugEvent5

Debug Meters

When you choose the Debug Meters option under MODE 55, the following option scrolls across the user interface:

1-> N = Debug Meters

1. Enter the specific meter number to go directly to the meter you need.
2. If you do not know the meter number you need, enter **1**. To scroll through the meter options in numerical order, press **Enter**. To scroll backwards, press **Enter** and **CLR** at the same time.
3. Press **Enter** to return to MODE 55.

User Interface Keypad Functions

Previous Events

1. When you select the Previous Events option under MODE 55, the user interface displays Event Codes on the top line. A list of numbers, 1 through 99, appears on the bottom line. This list is the last 99 events archived for historical purposes.
2. To navigate through the events in ascending order (1 being the most recent event), press **Enter**. To scroll in descending order, press **Enter** and **CLR** at the same time.
3. After the display is finished, press **CLR** to return to MODE 55.

Debug Text

1. When you select the Debug Text option under MODE 55, the user interface displays a long list of debug meter variables.
2. After the display is finished, press **CLR** to return to MODE 55.

Note

This option appeared under MODE 58 in earlier ECO numbers.

View Memory

1. When you select the View Memory option under MODE 55, the user interface displays

ENTER ADDRESS
00000 000000

2. This option is used by Bally Systems personnel to identify Code Space and RAM option values. It is for display only. **No options can be changed using this MODE.**
3. After the display is finished, press **CLR** to return to MODE 55.

Note

This option appeared under MODE 89 in earlier ECO numbers.

User Interface Keypad Functions

Reset Debug Meters

1. When you select this mode, the user interface displays

2 = Reset Debug Meters, 3 = Reset Previous Events, 4 = Reset Debug Text, 10 = Reset All

2. Choose the meters you would like reset to 0.
3. Press **CLR** to return to MODE 55.

User Interface Keypad Functions

MODE 56 - Clear Meters

If you are authorized, this mode lets you clear (zero) all the meters (Coin In Drop, Handle, etc.) in the MC250.

USE THIS FUNCTION WITH CAUTION. An adjustment item is generated by the system if the meters are cleared.

Before you begin to zero the meters, first look up the current bets value through MODE 20. The bets value is the four least significant digits of the MC250 Bets meter. Only after obtaining the bets value should you enter MODE 56.

Note that an unauthorized employee or a NAK (Negative Acknowledge) from SDS prevents zeroing of meters.

When you select this mode, an XC25 (Request to Change GMU) requests access to the meters. If you are not an authorized employee, the user interface displays:

DENIED or MSG FAILED

If you are an authorized user, the user interface displays:

CODE XXXX

1. Press **ENT** to return to the MODE 00 prompt if you do not want to zero the meters.
2. To zero the meters, look up the current bets value through MODE 20 as noted above. The bets value is the four least significant digits of the MC250 Bets meter.
3. Type the bets value at the CODE XXXX prompt and press **ENT**. An XC98 (GMU Meters Reset) message is sent to the system and the user interface momentarily displays:

METERS 0ed

The user interface then redisplay the MODE 00 prompt.

User Interface Keypad Functions

MODE 57 – Intrepid Mode

If you are authorized, this mode allows you to reboot the GMU into Intrepid mode. This mode allows you to make changes to the GMU chip using the Intrepid program.

Before you begin, connect a laptop, with Intrepid installed, to the GMU.

Note that an unauthorized employee or a NAK (Negative Acknowledge) from SDS prevents you from going forward.

When you select this mode, an XC25 (Request to Change GMU) requests access to the meters. If you are not an authorized employee, the user interface displays:

DENIED or MSG FAILED

If you are an authorized user, the user interface displays:

CODE 0000

1. Type **20** to look up the current bets meter. Note the four least significant digits of the MC250 Bets meter. This is called the bets value.
2. Press ENT to return to the MODE 00 prompt.
3. Type **57**, and you see:

CODE 0000

4. Type the bets value at the CODE prompt and press **ENT**. You see:

Press ENT

5. Press **ENT** again, and you see:

Booting...

6. The GMU reboots, and displays:

INTREPID

7. Once you are finished using Intrepid, the GMU reboots and returns to the MODE 00 prompt.

User Interface Keypad Functions

MODE 58 – View Debug Meters (used only by Bally Systems personnel for test and analysis)

1. When you select this mode, the user interface displays a long list of debug meter variables.
2. After the display is finished, the user interface returns to MODE 58.

Note

In certain ECO numbers, this menu is displayed under MODE 55.

MODE 63 – Ticketing Records

This mode allows you to view the most recent ticket print records, redeem records, and ticketing errors. Error lists can also be reset using this option. When you select this mode, the user interface displays six options.

View Redeem Errors

1. Type **01** to view redeem error records. The user interface displays

000 000 000 000 000 000 000 REDEMPTION

2. The last 20 ticket redemption error numbers scroll across the top of the display.

View Print Errors

1. Type **02** to view print error records. The user interface displays

000 000 000 000 000 000 000 PRINTING

2. The last 20 ticket printing error numbers scroll across the top of the display. Press **ENT** to toggle through them.

Reset Errors

1. Type **03** to reset the error lists. The user interface displays

ERROR LISTS CLEARED AND REDEMPTION THROTTLE RESET.
--

2. Press **ENT** to return to the ticketing records mode menu.

User Interface Keypad Functions

Toggle View Errors

1. Type **04** to display error numbers on the user interface as the errors occur. The user interface displays

ERRORS WILL BE DISPLAYED.

2. Press **ENT** to return to the Mode 63 menu.

View Print and Redeem Records

1. Type **05** to view print records; type **06** to view redeem records. The most recent record is shown first. The user interface displays the sixteen-digit barcode of the ticket and the value of the ticket in pennies.

8571134962873124
AMOUNT: 000000025000

Note

If no amount is displayed, an error occurred during the ticket transaction.

2. Press **ENT** and the interface displays the date the ticket was printed or redeemed, based on your choice above, in the format MMDDYY.

8571134962873124
DATE: 112702

3. Press **ENT** and the interface displays the time the ticket was printed or redeemed in the format HH:MM:SS.

8571134962873124
TIME: 10:24:35

4. Press **ENT** and the interface displays whether the ticket is cashable or non-cashable.

8571134962873124
CASHABLE

5. Press **ENT** and the interface displays the status of the ticket transaction. 01 indicates the ticket transaction was successful; 02 indicates there was a failure with the ticket transaction.

8571134962873124
STATUS
01

6. Press **ENT** to view the next ticket record. When you are finished viewing records, press **CLR** to exit.

User Interface Keypad Functions

MODE 64 – GMU Manual Code Authentication

This mode displays or (re)calculates a CRC32 value for the code operating in the GMU.

Some jurisdictions require a CRC32 GMU authentication string to verify proper GMU code is installed. This allows an employee or regulator to view the GMU authentication details or calculate new ones from the interface display.

To Calculate a CRC32 Value

1. Type **2** to start a calculation. You see

SEED	4294967295
------	------------

The seed number is unique to the person who enters it and should be kept secret. It further ensures the authenticity of the code because it is used as the basis for the calculation. If no changes were made to the GMU code, the calculation results in the same authentication strings for the same seed.

2. Enter the seed you would like to use, and press **ENT**. You see

CALCULATING

The calculation typically takes between six and nine minutes, but may take up to 15 minutes. The employee may be required to leave the card inserted during the calculation, depending on the GMU version that is currently installed.

If, during a calculation, an employee card is inserted into the slot machine's card reader and Mode 64 is entered, "CALCULATING" is displayed.

After calculation is complete, use option **1** to view its results as shown below.

User Interface Keypad Functions

To Display a CRC32 Value

1. Type **1** to view the results of the last calculation. You see

CODE D3B65CD8

2. The 8-digit **CODE** authentication string is the CRC32 of executable code space and blank space, not including the GMU options code space. Press **ENT** and you see

OPTIONS AF2B3930

3. The 8-digit **OPTIONS** authentication string is the CRC32 of the GMU options space. Press **ENT** and you see

CHIP A61398FD

4. The 8-digit **CHIP** authentication string is the CRC32 of the entire flash chip space. Press **ENT** and you see

DOC	907016B
-----	---------

5. The 7-digit **DOC** authentication string is the document identification number for the GMU code version currently installed. Press **ENT** and you see

ID	BRP0016
----	---------

6. The 7-digit **ID** authentication string is the EPROM identifier set through the Intrepid configuration program. Press **ENT** and you see

EMP#	0036
------	------

7. The 4-digit **EMP#** authentication string is the Employee Identification number of the employee who requested the last calculation.

User Interface Keypad Functions

MODE 70 – eCASH Transactions and Errors

This mode allows you to view up to 100 eCASH transactions, which are stored in the GMU's non-volatile RAM. You can also view information about the eCASH message that was in progress at the time an error occurred.

Each record contains the following fields:

- Transaction ID
- Date of Transaction
- Time of Transaction
- Transaction Type (Deposit or Withdrawal)
- Non-Cashable Amount Transferred
- Cashable Amount Transferred
- Player Card Number
- Transaction Status (See “eCASH Error Codes”)
- Amount Required by Player

1. Select Mode 70 and the most recent transaction is displayed. Each transaction begins with the Transaction ID showing on the top line of the display. A Help message scrolls on the lower line of the display with navigation information.
2. Perform the following operations to navigate through eCASH transaction records:
 - Press **ENT** to advance through the fields of the current transaction. If **ENT** is pressed at the last field of the transaction (i.e., the Time of Transaction field), you are returned to the first field of the current transaction (i.e., the Transaction ID field).
 - Press **0** to view the next transaction. You can use this option at any point in a transaction record, and you move the same transaction field in the next record that you are currently viewing. For example, if you are viewing the Player Card Number field and press **0**, you advance to the Player Card Number field in the next record.

If you press **0** while viewing the most recent transaction record, you are returned to the oldest transaction record.

User Interface Keypad Functions

- Press **5** to view the previous transaction. You can use this option at any point in a transaction record, and you move the same transaction field in the next record that you are currently viewing. For example, if you are viewing the Cashable Amount Transferred field and press **5**, you move to the Cashable Amount Transferred field in the previous record.

If you press **5** while viewing the oldest transaction record, you are returned to the most recent transaction record.

eCASH Error Codes

Error Code	Error	Description
<i>Errors texted to the system upon transaction completion and stored on GMU</i>		
0	NO ERROR	Transaction successful.
1	PARTIAL WITHDRAWAL	Not all funds requested were transferred to the game.
2	GAME REFUSES FUNDS	Game will not accept the funds transfer transaction.
3	GAME COM DOWN	Game communication is down.
4	GAME COM BUSY	Game communication is busy.
5	GAME NOT RESPONDING	Game didn't acknowledge receipt of transaction. It is unknown if game received funds.
6	GAME TRANS ID WRONG	Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.
7	CARD REMOVED	Card removed between request and authorization.
8	NO SYSTEM AUTH	System authorized message never received.
<i>Errors stored on GMU because a security failure disallowed the transmission</i>		
16	NO ERROR	Transaction was not secure, but there was no error.
17	PARTIAL WITHDRAWAL	Transaction was not secure. Not all funds requested were transferred to the game.
18	GAME REFUSES FUNDS	Transaction was not secure. Game will not accept the funds transfer transaction.
19	GAME COM DOWN	Transaction was not secure. Game communication is down.
20	GAME COM BUSY	Transaction was not secure. Game communication is busy.
21	GAME NOT RESPONDING	Transaction was not secure. Game didn't acknowledge receipt of transaction. It is unknown if game received funds.

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User Interface Keypad Functions

Error Code	Error	Description
22	GAME TRANS ID WRONG	Transaction was not secure. Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.
23	CARD REMOVED	Transaction was not secure. Card removed between request and authorization.
24	NO SYSTEM AUTH	Transaction was not secure. System authorized message never received.
<i>Errors stored on the GMU because the system never responded with an ACK</i>		
32	NO ERROR	Transaction was successful, but there was no system acknowledgment.
33	PARTIAL WITHDRAWAL	No system acknowledgment. Not all funds requested were transferred to the game.
34	GAME REFUSES FUNDS	No system acknowledgment. Game will not accept the funds transfer transaction.
35	GAME COM DOWN	No system acknowledgment. Game communication is down.
36	GAME COM BUSY	No system acknowledgment. Game communication is busy.
37	GAME NOT RESPONDING	No system acknowledgment. Game didn't acknowledge receipt of transaction. It is unknown if game received funds.
38	GAME TRANS ID WRONG	No system acknowledgment. Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.
39	CARD REMOVED	No system acknowledgment. Card removed between request and authorization.
40	NO SYSTEM AUTH	No system acknowledgment. System authorized message never received.
<i>Errors stored on GMU because the system responded with an ACK, but it took too long</i>		
48	NO ERROR	Delayed system acknowledgment, but transaction successful.
49	PARTIAL WITHDRAWAL	Delayed system acknowledgment. Not all funds requested were transferred to the game.
50	GAME REFUSES FUNDS	Delayed system acknowledgment. Game will not accept the funds transfer transaction.
51	GAME COM DOWN	Delayed system acknowledgment. Game communication is down.
52	GAME COM BUSY	Delayed system acknowledgment. Game communication is busy.

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User Interface Keypad Functions

Error Code	Error	Description
53	GAME NOT RESPONDING	Delayed system acknowledgment. Game didn't acknowledge receipt of transaction. It is unknown if game received funds.
54	GAME TRANS ID WRONG	Delayed system acknowledgment. Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.
55	CARD REMOVED	Delayed system acknowledgment. Card removed between request and authorization.
56	NO SYSTEM AUTH	Delayed system acknowledgment. System authorized message never received.
<i>Errors sent to the system because the power cycled mid-transaction and stored on the GMU</i>		
64	NO ERROR	Power went down, but transaction successful.
65	PARTIAL WITHDRAWAL	Power went down. Not all funds requested were transferred to the game.
66	GAME REFUSES FUNDS	Power went down. Game will not accept the funds transfer transaction.
67	GAME COM DOWN	Power went down. Game communication is down.
68	GAME COM BUSY	Power went down. Game communication is busy.
69	GAME NOT RESPONDING	Power went down. Game didn't acknowledge receipt of transaction. It is unknown if game received funds.
70	GAME TRANS ID WRONG	Power went down. Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.
71	CARD REMOVED	Power went down. Card removed between request and authorization.
72	NO SYSTEM AUTH	Power went down. System authorized message never received.
78	POWER DOWN WHILE WAITING FOR SYSTEM AUTH	Power went down while GMU was waiting for system authorization.
79	POWER DOWN WHILE WAITING FOR GAME ACK	Power went down while GMU was waiting for the game to acknowledge the transaction.
<i>Errors stored on GMU because the system did not respond to power down ACK</i>		
80	NO ERROR	System did not respond to power down acknowledgment. Transaction successful.
81	PARTIAL WITHDRAWAL	System did not respond to power down acknowledgment. Not all funds requested were transferred to the game.
82	GAME REFUSES FUNDS	System did not respond to power down acknowledgment. Game will not accept the funds transfer transaction.

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User Interface Keypad Functions

Error Code	Error	Description
83	GAME COM DOWN	System did not respond to power down acknowledgment. Game communication is down.
84	GAME COM BUSY	System did not respond to power down acknowledgment. Game communication is busy.
85	GAME NOT RESPONDING	System did not respond to power down acknowledgment. Game didn't acknowledge receipt of transaction. It is unknown if game received funds.
86	GAME TRANS ID WRONG	System did not respond to power down acknowledgment. Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.
87	CARD REMOVED	System did not respond to power down acknowledgment. Card removed between request and authorization.
88	NO SYSTEM AUTH	System did not respond to power down acknowledgment. System authorized message never received.
94	NO POWER DOWN AUTH	System did not respond to power down authorization message.
95	POWER DOWN WHILE WAITING FOR GAME ACK	System did not respond to power down acknowledgment while waiting for game acknowledgment.
<i>Errors stored on the GMU because the system responded to the power down ACK, but did it late.</i>		
96	NO ERROR	Delayed system response to power down acknowledgment, but transaction successful.
97	PARTIAL WITHDRAWAL	Delayed system response to power down acknowledgment. Not all funds requested were transferred to the game.
98	GAME REFUSES FUNDS	Delayed system response to power down acknowledgment. Game will not accept the funds transfer transaction.
99	GAME COM DOWN	Delayed system acknowledgment. Game communication is down.
100	GAME COM BUSY	Delayed system response to power down acknowledgment. Game communication is busy.
101	GAME NOT RESPONDING	Delayed system acknowledgment. Game didn't acknowledge receipt of transaction. It is unknown if game received funds.
102	GAME TRANS ID WRONG	Delayed system acknowledgment. Game acknowledged transaction with the wrong transaction ID number. It is unknown if game received funds.

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User Interface Keypad Functions

Error Code	Error	Description
103	CARD REMOVED	Delayed system acknowledgment. Card removed between request and authorization.
104	NO SYSTEM AUTH	Delayed system acknowledgment. System authorized message never received.
110	SYSTEM AUTH	Delayed system acknowledgment. System authorization.
111	GAME ACK	Delayed system acknowledgment. Game acknowledgment.

User Interface Keypad Functions

MODE 89 – View the Contents of Address Space (used only by Bally Systems personnel for troubleshooting and analysis)

1. When you select this mode, the user interface displays

ENTER ADDRESS	
00000	000000

2. This MODE is used by Bally Systems personnel to identify Code Space and RAM option values. It is for display only. **No options can be changed using this MODE.** Press **CLR** to return to MODE 00.

Note

In certain ECO numbers, this menu is displayed under MODE 55.

MODE 91- Employee Needs Assistance

This option lets you request emergency help. When you select this mode, an XC24 (Employee Needs Assistance) message is sent to the system. The MC250 waits for a reply from the system before changing the display.

If the MC250 receives an acknowledgment from the system, the user interface momentarily displays:

HELP COMES

The user interface redisplay the MODE 00 prompt.

If the system sends a NAK, your request was unsuccessful — try again. The user interface momentarily displays:

MSG NACKD	or	MSG FAILED
-----------	----	------------

The user interface redisplay the MODE 00 prompt.

Chapter 5 – Special Use GMU Chips

Overview

Special user GMU Chips allow additional functions that are not normally available at the GMU. Each special use GMU chip is inserted to perform a specific function, and is then removed. Currently, there are three special use GMU chips: the GMU Option Chip, the GMU Authentication Set Chip, and the eCASH and ePrinter Verification Chip.

GMU Option Chip

The GMU Option Chip verifies that a certain set of options has been written to the non-volatile RAM. The GMU Authentication Set Chip verifies that the correct code is on the GMU

The GMU Code Chip then verifies that a valid set of options have been written to non-volatile RAM on power-up. It does this by calculating a CRC-16 checksum of the area of non-volatile RAM that should contain all the options. There are two conditions that cause the GMU to reject what is stored in non-volatile RAM:

1. If the calculated checksum does not match the checksum stored in the non-volatile RAM at the end of the options.
2. If the document ID of the option chip that was used to write options into non-volatile RAM doesn't match the document ID that the code is expecting for it's option chip

If the GMU rejects what is stored in non-volatile RAM, the GMU does not communicate with either the slot machine or SDS. When this occurs, and no card is inserted, the message "Bad NOVRAM Check" is displayed.

User Interface Keypad Functions

GMU Option Chip Procedure

1. Remove GMU cover.
2. Power down the GMU by unplugging the power cable from the PWR slot, as shown

PWR Slot

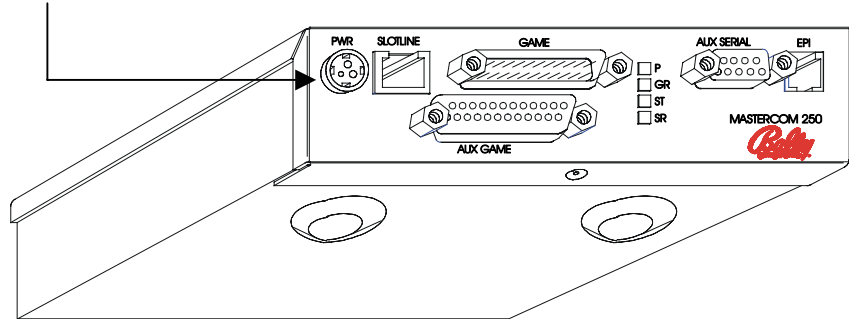


Figure 5-1. GMU Power Slot

User Interface Keypad Functions

3. Remove the GMU chip from slot U7 on the board, as shown.

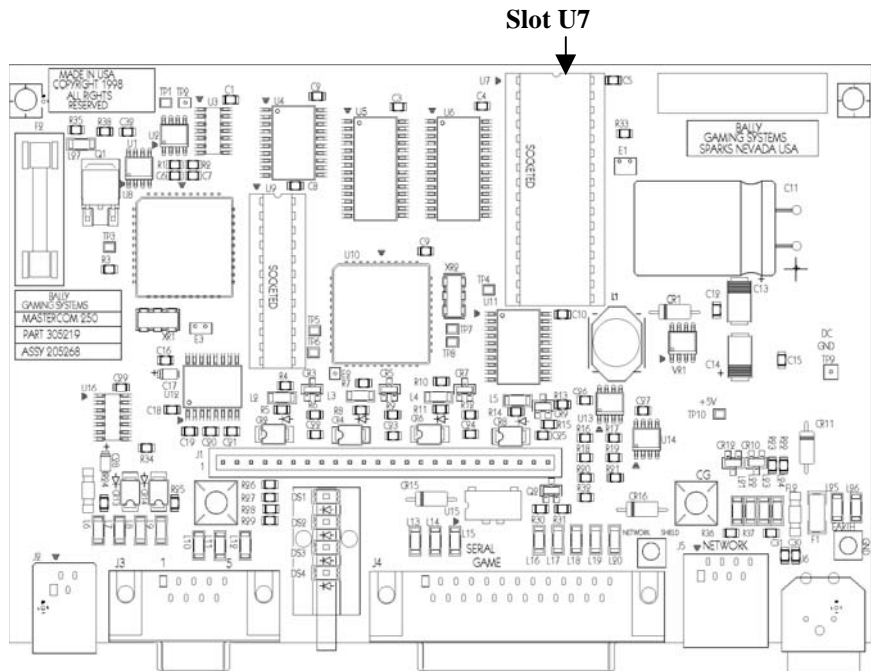


Figure 5-2. Slot U7

4. Insert the option chip into the U7 slot, making sure that the notch on the chip is on the same side as the notch indicated on the board.
5. Power up the GMU by inserting the power cable into the PWR slot. When this cable is connected, you see

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User Interface Keypad Functions

6. If no card is inserted, the screen goes blank, and you see

SUCCESS	
ICQ9921	3E2F

If the option chip was successful, the EPROM ID and CRC checksum of the options display below the “Success” message. In this example, **ICQ9921** is the EPROM ID, and **3E2F** is the 2-byte CRC checksum of the options. If the option chip was not successful, you see the message, “Write Options Failed.”

Note

It takes approximately 30 seconds for the GMU to boot. You must wait for the entire process to complete before continuing.

7. Power down the GMU, by unplugging the power cable from the PWR slot, as shown in step 2.
8. Insert the standard GMU chip, and power up the GMU by inserting the power cable into the PWR slot.
9. If the option chip is successfully installed, you see the standard scrolling greeting message.

User Interface Keypad Functions

GMU Authentication Set Chip

The GMU verifies its code on power-up. It does this by calculating a CRC-16 checksum of the entire chip. If the calculated checksum does not match the checksum stored in the non-volatile RAM, the code has been changed. If the code has been changed, the DUART is disabled. When this occurs, a Failed Checksum message is displayed as the first message after an employee card is inserted.

The GMU Authentication Set Chip has two functions. First, the set chip can be used to clear (zero) all the soft slot meters stored in the GMU (Coin In, Drop, Handle, etc.). Secondly, it is used to set up the GMU to accept new GMU firmware. Once the set chip is inserted, it writes a password into the non-volatile RAM. When a new GMU chip is inserted, the code looks for that password. If the password is present, the new calculated checksum is written to the non-volatile RAM as the correct checksum.

Each GMU code chip has a unique set chip. A GMU cannot be set using the set chip of previous code.

GMU Authentication Set Chip Procedure

1. Remove GMU cover.
2. Power down the GMU by unplugging the power cable from the PWR slot, as shown

PWR Slot

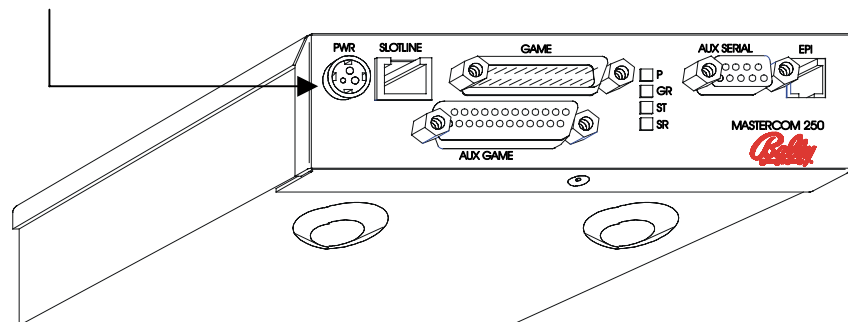


Figure 5-3. GMU Power Slot

User Interface Keypad Functions

3. Remove the GMU chip from slot U7 on the board, as shown.

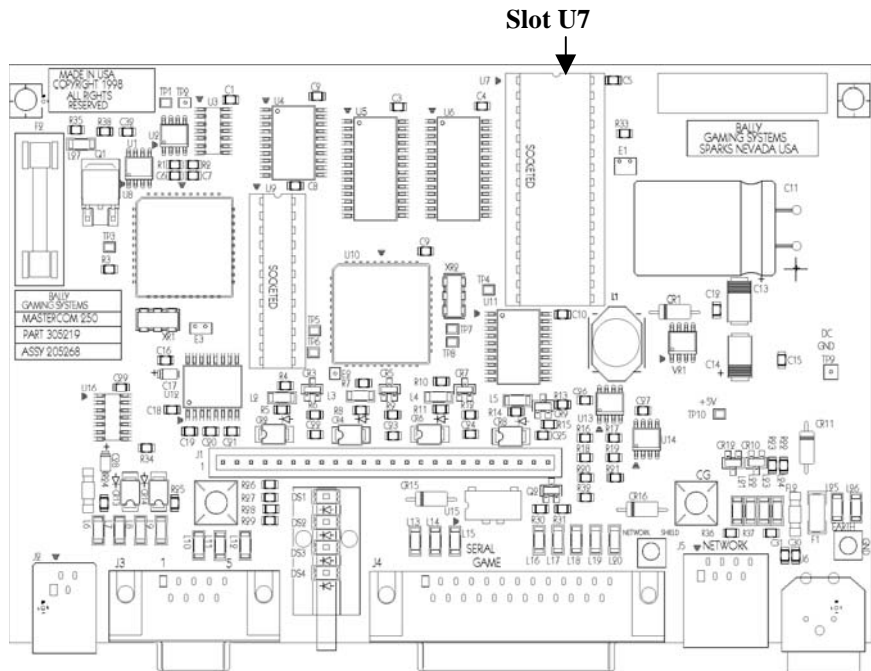


Figure 5-4. Slot U7

4. Insert the set chip into the U7 slot, making sure that the notch on the chip is on the same side as the notch indicated on the board.
5. Power up the GMU by inserting the power cable into the PWR slot. When this cable is connected, you see

<p>BALLY SYSTEMS 1996</p>

6. The screen goes blank and then the greeting scrolls across the screen.

Note

It takes approximately 30 seconds for the GMU to boot. You must wait for the entire process to complete before continuing.

7. When you see the greeting scroll across the screen, the set chip procedure is complete. Power down the GMU, by unplugging the power cable from the PWR slot, as shown in step 2.
8. Insert the standard GMU chip, and power up the GMU by inserting the power cable into the PWR slot.

User Interface Keypad Functions

9. To verify that the set chip procedure was successful, insert your employee card.
10. If display reads “Checksum Failed,” the set chip procedure didn’t work. If the checksum fails, perform steps 1 through 11 again.
11. If the normal employee functions display, the set chip procedure was successful.

To Test GMU Authentication

Each document number reflects a new set of GMU code (e.g., 907013 and 907014). Each one has a different CRC-16 checksum. To test the authentication function:

1. Perform the GMU set chip operation as described in the *GMU Authentication Set Chip* section above.
2. To verify that the CRC check performed at power up was successful, simply install a GMU chip with a different set of GMU code (i.e., a different document number).
3. Insert your employee function card.
4. If the CRC check performed was not successful, ticketing functionality is disabled and a “Failed Checksum” message is displayed.

User Interface Keypad Functions

eCASH and ePrinter Verification Chip

The eCASH and ePrinter verification chip is used to determine whether individual slot machines are optioned for eCASH and ePrinter. In addition, the version of SAS currently on the game is also shown when this chip is installed.

Notes

The verification chip does **not** communicate with the system or alter the NOVRAM in any way.

The game **must** be ready to take a credit through both the bill and coin acceptors (e.g., all doors are closed, the game is not in play, etc).

1. Remove GMU cover.
2. Power down the GMU by unplugging the power cable from the PWR slot, as shown

PWR Slot

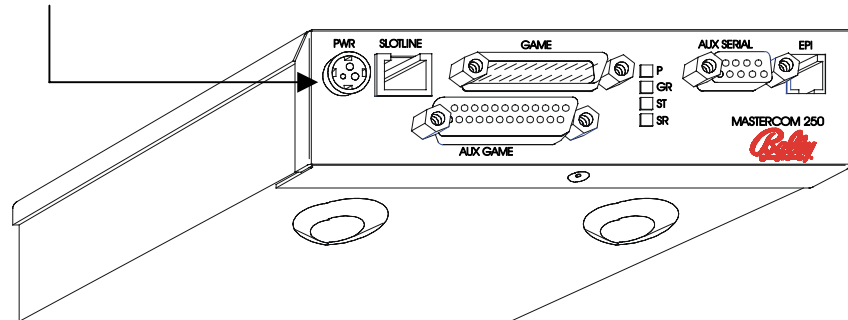


Figure 5-5. GMU Power Slot

User Interface Keypad Functions

3. Remove the GMU chip from slot U7 on the board, as shown.

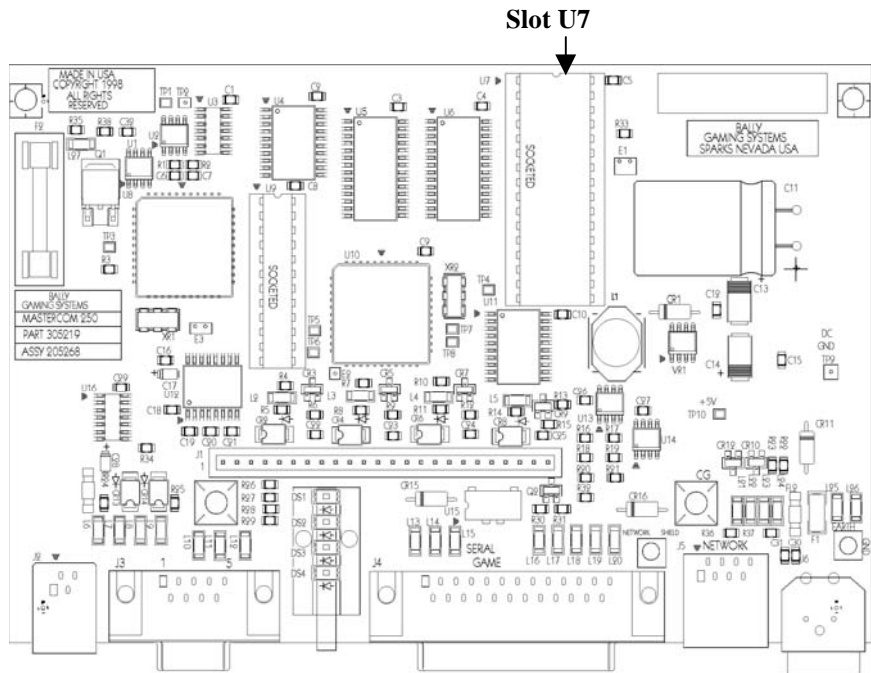


Figure 5-6. Slot U7

4. Insert the verification chip into the U7 slot, making sure that the notch on the chip is on the same side as the notch indicated on the board.
5. Disconnect the slot line connector.
6. Power up the GMU by inserting the power cable into the PWR slot. Once this cable is connected, you see the scrolling message

eCash Test Chip, Press a Key to Add a Credit to the Game

7. Press any key on the EPI panel and, depending on the game type, you see

SAS Version X.XX
Add 1 Credit (restr)

or

Simple Serial
Add 1 Credit (restr)

User Interface Keypad Functions

8. If the game successfully adds the credit, you see the “Add 1 Credit (restr)” message shown above. This means that the game is optioned for eCASH and ePrinter, and that you have just put one restricted credit on the game.

If the game is **not** optioned for eCASH and ePrinter, you see a “Credit Not Added” message:

SAS Version X.XX Credit Not Added

or

Simple Serial Credit Not Added

Note

If the game does not take the credit the first time you press a key on the EPI panel, press the button multiple times.

9. If a credit is added to the game, the GMU locks.
10. Play off the restricted credit.
11. Replace the verification chip with the game chip.

SDS Exception Codes and Change Booth Messages

Appendix A – SDS Exception Codes and Change Booth Messages

GMU-Generated Exception Codes

XC#	Message Text	Description
01	GMU Extended Response	This exception code contains additional data from the previous message.
02	Too Many Bad PIN Attempts	The player has exceeded the maximum number of tries to input his PIN at the slot machine.
03	Acceptor Hopper Jam	This exception code is generated on standalone Bill Changers that pay out of their own hopper (independent of the slot machine hopper).
04	Service Requested	A change button has been pressed indicating change or personnel request by customer.
05	Smart Hopper Info Message	This exception code is generated when a Smart Hopper message is sent from the GMU. It has multiple definitions, including Hopper Recalibrated , Hopper Unstable , Hopper Below Threshold , and Hopper Above Threshold .
06		<i>Not Used</i>
07	DMK Pre-emptive Fill	This exception code is generated when a DMK Pre-emptive Fill has occurred.
08	Hot Player	This message is generated when the system senses a significant number of coins have been inserted during a defined time. The default is 150 handle pulls in 30 minutes, with a minimum of 3 coins inserted for each handle pull (otherwise, the fewer coins, the handle pull is not counted). The maximum handle pulls that this can be set to is 250 handle pulls. This message can be used for floor personnel to contact players who have not been encouraged to join clubs, participate in special events, etc.
09	Diverter Malfunction	Coins are not being diverted to the hopper properly — the diverter not in proper position.
10	Hand-Paid Jackpot	A player has won an amount that is larger than the maximum number of coins that can be paid by the slot machine's hopper. The message is also generated for all progressive jackpots and for credit meter payouts that exceed the number of coins that can be paid by the slot machine. The type of jackpot can be determined by examining the Jackpot ID in the message.
11	Link Progressive Report	The GMU sends this exception code if it's one of a group of games on a link progressive when another game on the link hits a progressive jackpot. This exception code updates the coin meters for all games on the link at the time the progressive occurs.
12	Abandoned Card	This message is generated if an employee has left a card in the card reader (time is defined in Intrepid) after closing a slot machine door. It is assumed to be abandoned and this message is to alert management so the card can be retrieved before it is used by an unauthorized person.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
13	Illegal Card Removal	This message is generated when the communicator detects an attempt to “gaff” the card reader. This occurs when a thin card is inserted alongside a valid card, and the valid card is then removed. This is done in an attempt to collect bonus points in one or more machines as a result of another person’s play. Any play on the machine after the illegal card removal message has been generated is not credited to the customer.
14		<i>Not Used</i>
15	Acceptor Large Buy-In	This exception code is generated when the GMU sees excessive coin out (too many bills changed) between handle pulls. The amount of coin is specified in the personality of the game.
16	Acceptor Can’t Vend	The acceptor hopper (on a stand-alone bill changer) amount is too low to make change.
17	GMU Update Request	This exception code is generated when a slot attendant attempts to change the address, or other settings, through the DMK keypad.
18	Acceptor Bad Pay	Incorrect amount changed by the note acceptor (stand-alone bill changer).
19	Acceptor Runaway Hopper	This message is generated when the stand-alone bill changer pays two or more coins with no pay relay. The GMU communicates the exception code before the slot machine has stopped paying out.
20	Bonus Point Rollover	The player’s bonus points have incremented more than the maximum amount that can be represented in 4 digits, and are rolling over. This happens most often when the incrementation rate is extremely fast, or more probably, when one or more of the digits are to the right of the decimal.
21	Change Request	The customer at a slot machine equipped with a DMK has requested change via the keypad.
22	Beverage Request	The customer at a slot machine equipped with a DMK has requested a beverage via the keypad.
23	Game Reserved	An employee at a slot machine equipped with a DMK has reserved the game for a customer via the keypad.
24	Employee Needs Assistance	An employee assistance card has been inserted in the card reader. This indicates an employee without a radio is requesting assistance at the slot machine.
25	Request to Change GMU	An employee has entered the mode to readdress this GMU, and the GMU is asking the system if this employee is authorized to change the address.
26	Coupon Redemption Complete	In SDS Coupons, this exception code indicates that the game has accepted the moneys transfer from the GMU.
27		<i>Not Used</i>
28	Coupon Redemption Request	In SDS coupons, this exception code indicates that the GMU is planning on transferring moneys to the game. The transaction is used to validate the coupon in the coupon database on the system.
29	DMK Fill Request	This message is generated if the DMK fill feature is enabled and an employee requests a fill via the DMK keypad at the slot machine.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
30	Jackpot to Credit Meter	This code tells SDS that the jackpot was diverted to the slot machine credit meter and, therefore, the corresponding jackpot slip was canceled.
31	Bad Machine Pay Amount	The slot machine paid out an amount different than what was supposed to be paid out.
32	Game MPU Removed	On games that can detect it, this message is generated when the game MPU board is removed.
33	Game MPU Reinstalled	On games that can detect it, this message is generated when the game MPU is reinstalled and repowered.
34		<i>Not Used</i>
35	Auxiliary Fill Door Opened	The GMU sends this message to SDS when an auxiliary fill door is opened.
36	Auxiliary Fill Door Closed	An auxiliary fill door has been closed.
37	Employee Card In	An employee card is inserted.
38	Employee Card Out	An employee card has been removed.
39	Player Card In (220+)	This exception code is generated when a player card is inserted on a Release 7 GMU (if the GMU is Intrepedized to send an XC39 for player card in). This exception code indicates to SDS that the advanced player marketing features, and possibly the Bally eCASH feature, are available at this game.
40	Game MPU Reset	The slot machine's MPU board has been reset for some reason.
41	Bad Spin Reel #1	This message is generated when the MPU senses a malfunction in the operation of reel #1, such as not spinning, spinning in the wrong direction, not stopping, etc. This message is followed by a 64 message (depending on your game manufacturer), indicating that the machine is now in a "tilt" mode and requires an attendant to reset the machine.
42	Bad Spin Reel #2	This message is generated when the MPU senses a malfunction in the operation of reel #2, such as not spinning, spinning in the wrong direction, not stopping, etc. This message is followed by a 64 message (depending on your game manufacturer), indicating that the machine is now in a "tilt" mode and requires an attendant to reset the machine.
43	Bad Spin Reel #3	This message is generated when the MPU senses a malfunction in the operation of reel #3, such as not spinning, spinning in the wrong direction, not stopping, etc. This message is followed by a 64 message (depending on your game manufacturer), indicating that the machine is now in a "tilt" mode and requires an attendant to reset the machine.
44	Bad Spin Reel #4	This message is generated when the MPU senses a malfunction in the operation of reel #4, such as not spinning, spinning in the wrong direction, not stopping, etc. This message is followed by a 64 message (depending on your game manufacturer), indicating that the machine is now in a "tilt" mode and requires an attendant to reset the machine.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
45	Bad Spin Reel #5+	This message is generated when the MPU senses a malfunction in the operation of reel #5 or higher, such as not spinning, spinning in the wrong direction, not stopping, etc. This message is followed by a 64 message (depending on your game manufacturer), indicating that the machine is now in a “tilt” mode and requires an attendant to reset the machine.
46	Back in Play	This message is generated on the first coin in or coin out after a specified outage. A list of specified outages can be changed in the GMU by Bally Systems.
47	Reset During Payout	This message is generated when the MPU is reset during payout. It may also indicate tampering.
48	Extra Coins Paid Out	The slot machine has paid out a coin while the payout relay is still open or the hopper motor is off. There may be a bad brake on the hopper motor or the pinwheel may be bad. This exception code displays on the GMU if the card is inserted after the message is generated, and it is an indication of a possible machine malfunction.
49	Runaway Hopper	The slot machine has paid out more than two coins (and may still be paying coins when the message is printed) with the pay relay off. It may be caused by a machine malfunction or by tampering with the machine.
50	No Data on Mag Card	The card reader can't read data on the magnetic strip of the card.
		<i>51 is reserved for future use</i>
52 - 53		<i>Not Used</i>
54	Coin Out Jam	A coin has become stuck under the coin out counter switch. When the slot machine is paying out coins, the coins should pass quickly through the coin out counter switch. The brake may be going out on the hopper.
55	GMU Malfunction	The GMU is receiving unreliable information from the slot machine. It may be caused by a GMU error or by faulty wiring in the slot machine.
56	GMU Power-Up	The GMU has been powered up.
57	Win With No Handle Pull	The GMU has detected a machine payout without a handle pull. This exception also displays at the machine when a card is inserted.
58	Win With No Coin In	The GMU has detected coin out with no coin in.
59	Hopper Can't Pay	The GMU has detected the hopper is empty, or can no longer pay (there may be a coin jam).
60	Forced Periodic Report	The GMU is sending its current meters to the system in response to a special poll code requesting this report.
61	Periodic Report	The GMU is sending its current meters to the system because 45-50 minutes have elapsed without any other exception code being generated.
62	BLACKOUT	Power is lost at the slot machine.
63	Machine-Paid Jackpot	The slot machine has paid out an amount greater than the threshold amount set by the casino for the denomination of the slot.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
64	Slot Machine Tilt	This message is generated when a game malfunction is sensed. Normally the game is not playable until the malfunction is corrected and the game has been reset by authorized casino personnel. This message may be preceded by a specific malfunction XC.
65		<i>Not Used</i>
66	Acceptor Removed	The bill acceptor associated with a slot machine has been removed.
67	Bill Cassette is Full	The sensor on the acceptor bill cassette indicates that the bill cassette is full.
68	Bill Cassette is Jammed	The acceptor has a jam at the bottom of the path the bills take to the bill cassette.
69	Acceptor Not Responding	Communication is lost between the slot machine and the bill acceptor.
70	Acceptor Functioning Again	Communication has been restored between the slot machine and the bill acceptor.
71	Slot Door Opened	The slot door has been opened.
72	Slot Door Closed	The slot door has been closed.
73	Drop Door Opened	The drop door has been opened outside the drop period. Except during the daily drop period, the drop door on each machine may be legally opened only by a few specifically authorized people.
74	Drop Door Closed	The drop door has been closed.
75	Acceptor Door Opened	The acceptor door has been illegally opened. The only time a bill acceptor door may be legally opened is during the bill drop period.
76	Acceptor Door Closed	The acceptor door has been closed.
77	Player Card Inserted	A player card has been inserted.
78	Player Card Removed	A player card has been removed.
79	Bill Cassette Removed	The bill cassette has been removed, presumably for service or for drop purposes.
80	Bill Cassette Reinserted	The bill cassette has been reinserted.
81	Reel #1 Spin After Index	This message is used on Bally games to indicate a reel tilt when the MPU sees a malfunction in the operation of reel #1, such as not spinning, spinning in the wrong direction, not stopping, etc.
82	Reel #2 Spin After Index	This message is used on Bally games to indicate a reel tilt when the MPU sees a malfunction in the operation of reel #2, such as not spinning, spinning in the wrong direction, not stopping, etc.
83	Reel #3 Spin After Index	This message is used on Bally games to indicate a reel tilt when the MPU sees a malfunction in the operation of reel #3, such as not spinning, spinning in the wrong direction, not stopping, etc.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
84	Reel #4 Spin After Index	This message is used on Bally games to indicate a reel tilt when the MPU sees a malfunction in the operation of reel #4, such as not spinning, spinning in the wrong direction, not stopping, etc.
85	Reel #5+ Spin After Index	This message is used on Bally games to indicate a reel tilt when the MPU sees a malfunction in the operation of reel #5 or higher, such as not spinning, spinning in the wrong direction, not stopping, etc.
86	Too Many Bills Rejected	The bill acceptor has rejected bills more times in a row than is acceptable. The value of what is acceptable is set via Intrepid. Zero (0) is an invalid entry.
87	Acceptor Malfunction	The GMU sends this message to SDS when an acceptor malfunctions.
88	Can't Read Mag Card	If the GMU is not able to get a consistent answer when trying to read a card, this message is generated. The cause is probably that the GMU's card reader is defective, or that someone is attempting to use a non-SDS magnetic card.
89	Bill Vend to Credit Meter	In some jurisdictions, it is essential that all bill vends are paid in coins, rather than going to the credit meter. This message indicates that bill vends are not being paid in coins.
90	Coin In Jam	This message is generated when the coin in switch remains closed for longer than the normal time for a coin to pass the switch. It may be the result of a faulty or maladjusted coin in switch, a coin jam, or an attempt to string the slot machine.
91	Coin Drop Switch Stuck	A coin drop switch is stuck.
92	Acceptor Mechanism Jammed	There is a jam in the acceptor mechanism or in the bill cassette.
93	Too Many Coins In	The slot machine has accepted more coins than the maximum for a single bet on the game.
94	Game Meters Cleared	The slot machine's electronic meters have been cleared.
95	Game Memory Malfunction	Game memory malfunction. Possible EPROM tampering.
96	Bill Cassette Door Open	The bill cassette door has been opened.
97	Bill Cassette Door Closed	The bill cassette door has been closed.
98	GMU Meters Reset	Meter data is corrupt; GMU meters are reset to zero.
99	Employee Service	This message is sent along with the service code when a service code has been entered at the DMK.

SDS Exception Codes and Change Booth Messages

System-Generated Exception Codes

XC#	Message Text	Description
100	Jackpot Posted	Generated when a pending jackpot slip is printed using the PR (PRint) command at the change booth. It indicates that the jackpot amount was posted to the revenue file for the specific slot.
101	Fill Posted	Generated whenever a slot machine fill is entered at a change booth terminal. It is used to inform surveillance that a hopper fill is about to be made so that appropriate security measures may be taken. It also indicates that the fill amount is posted to revenue for this slot machine.
102	Bleed Posted	Generated when a slot machine bleed (excessive coins being removed from the inside of the slot machine cabinet) is entered at a change booth terminal. It indicates that the bleed amount is posted to the revenue file for the specific slot.
103	Repolls Exceeded	SDS could not receive a complete message from a GMU after the maximum number of attempts to receive the message. This may indicate a problem in the GMU or a fault in the communications line.
104	Bad Test Box Replies	The CIU did not get a response from a test box which the CIU expects to be on the line. This message indicates that there is probably a break in the slot line. The test box not responding is identified by the address in the message.
105	Noise on the Line	Generated when the system finds a high level of noise on one of the communication lines. The line number is included. In most cases, the system cannot maintain communications with the slot machines. Immediate action is required to clean up the signals.
106	Wrong GMU Replied to a Poll	The GMUs on each line are polled one at a time to find out if they have any reason to transmit. This message is generated if the GMU which replied is not the one which was just polled. This indicates a severe failure in a GMU and must be attended to immediately.
107	Alpha Character in Numeric Field	A field in the GMU message, which is supposed to contain all numeric values, has been found by the CIU to contain a non-numerical value.
108	GMU Too Active	If a GMU sends more than 30 messages in 5 minutes, it is declared too active and is ignored until it sends a periodic report, a card is inserted, a hand-paid jackpot occurs, or 2 hours elapse.
109	GMU Not Responding	Indicates no message was received from a GMU for over an hour. Even if nothing unusual occurs to cause a GMU to transmit information to the central processor, it sends a periodic report at least every hour. It is usually an indication that something is wrong with that GMU.
110	Employee Signed On	The employee card in this message has been signed on at a change booth.
111	Employee Signed Off	The employee card in this message has been signed off at a change booth.
112	Auto Employee Sign-Off	The employee card in this message has been automatically signed off by the system, as the card has been signed on for longer than the shift length defined in the SDS Parameter File.
113	Casino Opened	The casino has been opened via a change booth command (once used when casinos shut down at night and shut off the power to the slot machines).
114	Casino Closed	The casino has been closed via a change booth command (once used when casinos shut down at night and shut off the power to the slot machines).

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
115	Drop Period Start	A normal drop period is beginning. It is generated when the drop command is entered. To help expedite the drop procedure, all relevant open drop doors during this period are treated as legal. Since system security is slightly reduced at this time, extra care should be taken to see no one other than a drop crew member is allowed to open a drop box door. The change booth message number in this exception message identifies <i>which</i> drop has been started.
116	Drop Period End	Signals a normal end to the drop. It is generated when the drop end command is entered. The system returns to normal drop door monitoring. The change booth message number in this exception message identifies <i>which</i> drop has been ended.
117	No Slot At This Address	A GMU message was received with an unknown address.
118	Good Test Box Replies	A system-generated message used when a good test box is received.
119	Duplicate XC	This exception code is used internally by SDS, and is not generated by the GMU.
120	Customer Beef Posted	This message is generated when the BE (BEef) command is entered at the change booth. It indicates that a customer has a complaint (about an invalid payout, coin loss, etc.).
121-129		<i>Not Used</i>
		<i>130-136 are reserved for future use</i>
137	All Validators ON	This is used in validator testing to denote that all bill validators have been turned on.
138	All Validators OFF	This is used in validator testing to denote that all bill validators have been turned off. Once this exception code is sent, an exception code 137 must be sent before the "OPEN" change booth command is allowed.
		<i>139-150 are reserved for future use</i>
151-159		<i>Not Used</i>
160/A0	Patron Request for Info	This exception code is generated when a player presses the "5" button on a GMU which is optioned to send hexadecimal exception codes. It signifies that the player is interested in seeing marketing details (such as bonus point inquiry or other marketing information).
161/A1	Unknown Table Index	Bad game or denomination index.
162/A2	Employee Key Sequence	This exception code is used to transmit employee key sequences from the GMU to the system. Currently not in use.
163/A3	Display Fault (Stepper Game)	This message is generated when the game detects a problem with its display.
164/A4	Touch Screen Error (Video Game)	This message is generated when the game detects a problem with its touch screen.
165/A5	Low Battery Condition	A game's MPU battery has fallen below a normal level.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
166/A6	Game EPROM Signature Failure	There is a difference between the calculated signature and the stored signature. On game start-up, the game EPROM is tested and its signature compared against a stored constant.
167/A7	MPU Compartment Opened	The game's MPU (microprocessor unit) compartment has been opened.
168/A8	MPU Compartment Closed	The game's MPU (microprocessor unit) compartment has been closed.
169/A9	GMU Compartment Opened	The locked compartment holding the GMU has been opened. This message only occurs in jurisdictions having a separate locking enclosure for the GMU.
170/AA	GMU Compartment Closed	The locked compartment holding the GMU has been closed. This message only occurs in jurisdictions having a separate locking enclosure for the GMU.
171/AB	Game Power-Up	The game is powered up.
172/AC	Game Communications Lost	The link between the GMU and the slot machine has stopped functioning.
173/AD	Game Communications Restored	The slot machine has resumed communication with the GMU.
174/AE	New Game Selected	V7000 game change.
175/AF		<i>Not Used</i>
176/B0	Slot Printer Fault	Bally Games implemented a series of tilt codes for games that have a printer attached. All slot printer faults are mapped to this exception code, which indicates that something is wrong (paper out/jammed, etc.).
177/B1	Cashout Request	In applicable jurisdictions, this message is generated when a player attempts to collect an amount of coins from a game's credit meter that exceeds the maximum number of coins that can be paid by the hopper. It indicates that an attendant is needed at the game.
178/B2	Start Cardless Play	Game play has started without a customer card inserted.
179/B3	End Cardless Play	Cardless play is ended after a fixed amount of idle time, or when a player card is inserted.
180/B4	Clear Player Request	A Clear Player Request message is sent when the "CLR" key on the DMK is pressed after an employee responds to a customer request from the DMK such as for service, change or beverage.
181/B5	Qualifying Play Achieved	Player meets prescribed qualifications for free play.
182/B6	GMU Intrepidized	Tells SDS that changes have been made to the GMU through Intrepid.
183/B7	Transport-Level ACK	Acknowledgment of a transport message from RS6000.
184/B8	Transport-Level NAK	When SDS sends a freeform message and there is a problem with the message upon receipt, the GMU responds with a NAK.
185	GMU Freeform Message	This exception code indicates that the following information is a freeform message.

SDS Exception Codes and Change Booth Messages

XC#	Message Text	Description
186	Acceptor SW Changed	In certain jurisdictions, changes in a slot machine's bill acceptor software must be recorded by SDS. This exception code is generated when the checksum is different from the bill acceptor software, indicating that the bill acceptor software may have been changed.
187	Acceptor SW ACK	An employee card has been inserted and removed, verifying the bill acceptor software change. This exception code is only generated in response to XC186.
188		<i>Not Used</i>
189	Ticket Print	This message is printed when a ticket is printed.
190	Ticket Redeem	This message is printed when a ticket is redeemed.
191-192		<i>Not Used</i>
193	eCASH Withdrawal	Electronic funds have been transferred from the electronic funds server to the game.
		<i>194-255 are reserved for future use</i>

SDS Exception Codes and Change Booth Messages

Change Booth Messages (CBM)

CBMSG #	Terminal Message	Description
01	Jackpot	All GMU information is acceptable for that slot machine. The jackpot appears valid by SDS criteria and can be paid. The slot machine display flashes the jackpot amount.
02	Progressive Jackpot Approx.	A progressive jackpot hits. The DMK does not display the amount of the jackpot, but flashes "7777." Use the slot's progressive meter for the jackpot amount.
03	Invalid Jackpot	Usually means an invalid jackpot on that machine, or the number of coins played is wrong for that jackpot. <u>Nothing displays on the DMK.</u> A slot machine malfunction or a GMU error may cause this message. If a legitimate jackpot <u>has</u> occurred, this situation should be looked into carefully.
04	Jackpot – Slot Machine Status Invalid	All information sent by the GMU appears to be correct, but the slot machine is not supposed to be online. The most likely cause is that the machine has been put online on the floor, but not in the slot file database. The slot file database needs to be updated.
05	Jackpot – Unknown Slot Machine	The transmitting GMU does not correspond to the slot machine. Someone may have changed a slot machine GMU and given it the wrong address. Since the slot machine number is unknown, a search of the line must be made to find the slot machine that has the jackpot. After it is found, the GMU address should be corrected.
06	XX Played, YYYY Paid	An incorrect payout on the slot machine, where XX is the number of coins played on that game, and YYY is the number of coins paid out.
07	VIP	Indicates card-in and game play by a VIP player at a slot machine. The player's last and first names, drink preferences, and other casino comments are displayed so that the player can be greeted by the slot host or other appropriate personnel.
08	Coin Out Lost	The slot machine paid out a coin while the payout relay was open or the hopper motor was off. There may be a bad brake on the hopper motor or the pinwheel may be bad.
09	Machine-Paid Jackpot	The slot machine paid an amount greater than the threshold amount set by the casino for the slot denomination. The actual pay amount—not the threshold amount—is determined by the GMU personality.
10	Runaway Hopper	The slot machine paid more than two coins (and may still be paying coins when the message is generated) with the pay relay off. It may be caused by a machine malfunction or by tampering with the machine.
11	Low Battery Condition	The game's MPU battery has fallen below a normal level.
12	Game EPROM ID Signature Failed	There is a difference between the game's calculated signature and stored signature. On game startup, the game's EPROM (erasable, programmable, read-only memory) chip is tested and its signature compared against a stored constant.
13	MPU Compartment Opened	The game's MPU (Microprocessor Unit) compartment is opened.
14	MPU Compartment Closed	The game's MPU (Microprocessor Unit) compartment is closed.
15	Bad Mag Card – No Data	Generated by an XC50 (Bad Mag Card Read).
16	Temporary Coin Out Jam	Mechanical problem. The coin may be jammed, or an attempt may have been made to string the machine.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
17	Game Power-Up	The game is powered up.
18	Coin Out Jam	A coin is stuck under the coin out counter switch. When the slot machine is paying out coins, they should pass quickly through this switch. The brake may be going out on the hopper.
19	Slip Voided	SDS has received a void slip command (VOid) from a change booth to void a slip that was previously printed.
20	GMU Malfunction	The GMU is receiving unreliable information from the slot machine. It may be caused by a GMU error or by faulty wiring in the slot machine.
21	GMU Compartment Opened	The locked compartment holding the GMU has been opened. This message only occurs in jurisdictions having a separate locking enclosure for the GMU.
22	GMU Compartment Closed	The locked compartment holding the GMU has been closed. This message only occurs in jurisdictions having a separate locking enclosure for the GMU.
23	Game Communications Lost	The link between the GMU and the slot machine has stopped functioning.
24	Illegal Pay	Normal sequence of game events has not been followed. The slot machine is paying out coins, although no coins were inserted (XC58 – Win With No Coin In) or the handle was not pulled since the last payout (XC57 – Win With No Handle Pull).
25	Game Communications Restored	The slot machine resumes communication with the GMU.
26	Hopper Can't Pay	The GMU detects that the hopper is empty.
27	Illegal Auxiliary Fill Door Opened	An unauthorized person opened the auxiliary fill door.
28	BLACKOUT	Power is lost at the slot machine—usually because of an empty or runaway hopper, or a coin jam. Performing a hopper fill or clearing the coin jam allows the machine to return to normal operations.
29	Bill Vend to Credit Meter	In some jurisdictions, all bill vends must be paid in coins, rather than going to the credit meter. This message indicates that bill vends are not being paid in coins.
30	Unknown Table Index	At game startup, a table of valid SMI codes and denomination values goes to the GMU. On subsequent simple serial messages, a table index pointer “points” to an entry in this startup table. This message occurs if it points to an empty location.
31	Illegal S/M Door Opened – Not Signed On	An employee card that was not signed on was inserted before the slot machine door was opened (proper procedure). The person may have forgotten to sign on or is still working after signing off.
32	Illegal S/M Door Opened – Illegal Card	The card inserted in the card reader has a valid casino ID, but the card number is not in the SDS card file.
33	Illegal S/M Door Opened – No Card	No card was inserted. It is possible that someone from outside the casino has opened the door.
34	Illegal Drop Door Opened	Drop door was opened outside the drop period. Except during daily drop, the drop door on each machine may be opened by only a few authorized people.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
35	Jackpot Authorized	Someone with appropriate jackpot authorization inserted his card in the card reader on the winning slot machine. Message includes the card ID of the person authorizing the jackpot and the amount paid.
36	Jackpot – Illegal Card	Security breach. Occurs when a card, inserted in the card reader to authorize a jackpot, has a valid casino ID, but the card number is not in the SDS card file.
37	Jackpot Over Authorized Amount	Procedural error. Employee has inserted his valid card into the machine to authorize the jackpot, but the jackpot is over his authorized limit.
38	Jackpot Employee Not Signed On	Indicates an unsuccessful attempt to authorize a jackpot because card was not signed-on. An employee may have forgotten to sign-on or worked past a normal shift and was signed-off by the system. If someone who should not have a card is attempting to authorize the jackpot, it is a security problem. For operational errors, a properly signed-on employee can authorize the jackpot and operations proceed normally.
39	Illegal Card In	The only card in message unrelated to a jackpot. Indicates that the card is not signed-on to anyone. It may be a procedural error — forgetting to sign-on a card or turn in a card at shift end. If an unauthorized person is attempting to penetrate the system, it is a security problem.
40	Can't Read Card	If the GMU is not able to get a consistent answer when trying to read a card, this message is generated. The cause is probably that the GMU's card reader is defective, or that someone is attempting to use a non-SDS magnetic card.
41	Coin In Jam	Generated when the <u>coin in switch</u> remains closed for longer than the normal time for a coin to pass the switch. It may be the result of a faulty or maladjusted coin in switch, a coin jam, or an attempt to string the slot machine.
42	GMU and Slot File Denom Differ	Indicates that the GMU denomination identifier in the A1 message type does not match the denomination for that slot in the slot file database. Either the GMU denomination or slot file denomination is incorrect for the slot machine.
43	Static Tilt	Generated when a static tilt has occurred.
44	Static Tilt (Meter Reset)	Each time the GMU scans the operation of the slot machine (about 1,000 times each second), it checks its own coin and handle pull meters. If it finds anything wrong, this message is generated and the GMU resets its internal meters to zero.
45	Meter Reset	The slot machine's electronic meters have been cleared.
46	Coin Drop Period Start	Normal coin drop is beginning, triggered by the drop command. To help expedite the drop procedure, all open drop doors are treated as legal. Since system security is slightly reduced at this time, extra care should be taken to see that no one other than a drop crew member is allowed to open a drop box door.
47	Coin Drop Period End	Signals a normal end to coin drop, triggered by the drop end command. The system returns to normal drop door monitoring.
48	Coin Drop Period – Time Out	If a coin drop period does not end within the time specified in the parameter file, the system automatically ends it. It means that drop is taking longer than it should or the crew chief forgot to end the drop period. All further open drop doors are illegal.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
49	Fortune Jackpot	A legal jackpot of an indeterminate amount because of the slot design.
50	Invalid GMU – Line XX Address YYY	When verifying a GMU message, SDS finds that the GMU was not assigned a slot machine. A new GMU may have an incorrect address. The line number and GMU address are included so you can find the machine in error.
51	Max Repolls Exceeded – S/M XXXX	After the maximum attempts to receive this GMU message, SDS could not receive the complete message. Indicates a GMU problem or communications line fault.
52	Test Box Error	Each communications line has at least one test box that SDS uses to ensure that the line is intact and that communications can be maintained with all slot machines. Typically generated by no response from a test box and often indicates a break in the slot line. A mechanic should investigate the problem, as it may also affect communications with slot machines.
53	Chip is Unlocked	This message is generated at power-up when the GMU notes that a chip designated as unprogrammable can be programmed.
54	Auto Switchover to System A	An informational message with no effect on operations, it means only that the A side has taken over operations from the B side. The only action required is to inform the computer operator so he may find out why the event happened.
55	Auto Switchover to System B	Same as previous message except transfer of control is reversed.
56	Backup System Off	The dual program hasn't heard from the backup system, and assumes it is down.
57	Backup System On	Operations have returned completely to normal. The backup system has been repaired and is functioning properly.
58	Computer Requires Attention	During self-diagnosis, the computer system discovered some minor problems. The computer operator should be informed, but operations can continue normally.
59	Customer Cashout Request	Generated when a player attempts to collect an amount of coins from a game credit meter that exceeds the maximum number of coins that can be paid by the hopper. It indicates that an attendant is needed at the game (Applicable jurisdictions only).
60	System Startup	Generated when the system is beginning operations. No action is required as everything is proceeding normally.
61	Line Noise – Line X	Generated by a high level of noise on one of the communications lines. In most cases, the system cannot maintain communications with the slot machines. Immediate action is required to clean up the signals, as this condition can "busy-out" the system.
62	Wrong S/M Replied to a Poll	When the GMUs on each line are individually polled to find out if they have any reason to transmit, this message shows that the replying GMU is not the one just polled. Indicates a severe failure in a GMU and must be attended to immediately.
63	Hex Characters in a Count Field	The coin count and handle pull information sent by the GMU should contain only digits from 0 through 9. However, each of the fields can contain a number up to 15. If a number between 10 and 15 is found, this message is generated. The GMU EPROM that caused this message must be replaced.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
64	Illegal Operation by Employee	If an employee opens a slot machine and performs a function for which he is not authorized, this message is sent. Action depends on the operation being performed and the employee involved. Since a message is about the illegal operation has already been sent, it should be very easy to determine what mistake was made.
65	Slot Machine Fill	Generated by a slot machine fill entered at a change booth terminal. Informs surveillance that a fill is about to be made so appropriate security measures are taken.
66	GMU Not Responding	No message has been received from a GMU for over an hour. Even if nothing unusual happens, the GMU sends a periodic report at least every hour. It is usually an indication that something is wrong with that GMU.
67	Manual Switchover to System A	Indicates that someone has intentionally caused the A side to take over operations from the B side. You need to find out if the operator is aware of the switchover. Most often, it is the operator who has caused the switchover, but it is possible that someone other than the operator has accidentally or purposely done this.
68	Manual Switchover to System B	Same as the previous message, except the transfer of control is reversed.
69	S/M Door Open Too Long	The door of a slot machine was left open for more than 15 minutes. This message is generated every 15 minutes until the door is closed.
70	Drop Door Open Too Long	The drop door of a slot machine has been left open for more than 15 minutes. This message is generated every 15 minutes until the door is closed.
71	Begin Auto Synchronization	An informational message indicating that data is about to be transferred from the online to the offline side to ensure that offline data is kept current with online data. Synchronization occurs automatically approximately every 4 hours under normal conditions. No action is required.
72	Auto Synchronization Complete	An informational message indicating that the data from the online system has finished being copied to the offline system. No action is required.
73	Auto Synchronization Aborted	An error occurred while trying to synchronize the systems. Synchronization stops and regular operations resume. The operator should be informed of this message. File contention is one of the most common causes of this message being generated.
74	Questionable Fill – YYYY in Hopper	Generated if the number of coins calculated as being left in the hopper at the time a fill is entered is greater than expected.
75	Ramp Switch Stuck	A coin may be jammed, or an attempt may have been made to string the machine.
76	Pay With No Handle Pull	Generated when GMU detects a machine payout without a handle pull (on older electromechanical slot machines only). It also displays at the GMU upon card in.
77	Game Tilt	A game malfunction is sensed. Normally the game is not playable until the malfunction is corrected and the game has been reset by authorized casino personnel. This message may be preceded by a specific malfunction XC.
78	Reset During Payout	Sent when a Bally E-series MPU resets during a payout or indicates tampering.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
79	Over Max Coin In	Too many coins have been allowed to be inserted for a single handle pull. Check the relay controlling coin in rejection. The lock-out mechanism may be broken.
80	Touch Screen Error	Generated when the game detects a problem with its touch screen.
81	Spin After Indexing Reel #X	Indicates a reel tilt on the Bally E model when the MPU sees a malfunction in the operation of its reels, such as not spinning, spinning in the wrong direction, not stopping, etc. This message is followed by a 77 message, indicating that the machine is now in a "tilt" mode and requires an attendant.
82-85		<i>Not Used</i>
86	Slot MPU Removed	On games that can detect it, this message is sent when a game's MPU is removed.
87	Slot MPU Reinserted	Slot's MPU is reinserted and powered back on.
88	Display Fault (Stepper Game)	Generated when the game detects a problem with its display.
89	Customer Beef	The customer has a complaint about an invalid payout, coin loss, etc.
90	Reset During Reel Read	Generated on Bally E machines when the slot's microcomputer resets when it tries to read reel stop positions. Indicates possible tampering with the machine.
91	Improper Spin Reel #X	Messages generated from the Bally E model, when the MPU senses a malfunction in its reels, such as not spinning, spinning in the wrong direction, not stopping, etc. These messages are followed by a 77 message, indicating that the machine is now in a "tilt" mode and requires an attendant to reset the machine.
92	Pending JP Slip For Slot XXXX	Pending slips under X minutes old or at least Y minutes old create the message, Pending JP slip for slot XXXX , where XXXX is the slot or asset number. The settings to the parameters, Send Msg For Pending Slips Under X Minutes Old? and Send Msg For Pending Slips At Least Y Minutes Old? determine X and Y for the pending slip change booth message.
93-95		<i>Not Used</i>
96	Abandoned Card	Generated if an employee leaves a card in the reader for more than 30 seconds after closing a slot door. This message alerts management to retrieve the card before it is used by an unauthorized person.
97	Illegal Card Removal	Generated when the communicator detects an attempt to "gaff" the card reader in an attempt to collect bonus points from another person's play (e.g., when a thin card is inserted with a valid card, and the valid card is then removed). Any play after this message is not credited to the customer.
98		<i>Not Used</i>
99	Slot Machine Bleed	Generated when the BL (bleed) command is entered at the change booth. It means that money was removed from a slot machine being moved to a warehouse.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
100	Calculated Amount	A progressive jackpot hit and the system has not calculated the amount from coin in times the progressive factor in the progressive file.
101	Progressive Jackpot – Unknown Amt.	A progressive jackpot has hit but the system is unable to obtain the jackpot amount.
102	Game Memory Bad	Possible PROM chip tampering.
103	Jackpot– Slip Revenue Posted	Generated when the PR (Print) command is entered at the change booth. It means that the jackpot amount was posted to the revenue file for the specified slot.
104	Jackpot Amount Adjusted – New Amt.	Generated if a jackpot slip was created after the jackpot was manually adjusted against the SDS calculated amount.
105	Manual Jackpot Entered For:	Generated when the CB operator prints a jackpot slip.
106	Service Requested	A service button on the slot machine was pressed, indicating a patron’s request for change or service.
107	Slot Printer Fault	Generated by an XC176 from a GMU on certain Bally games with ticket printers installed, rather than coin hoppers. When any of several printer tilt codes are generated by the game, an XC176 is sent to SDS.
108	Hot Player	SDS senses that a significant number of coins were inserted during a defined time. The default is 150 handle pulls in 30 minutes with a minimum of 3 coins inserted for each handle pull. (With fewer coins in, the handle pull is not counted.) The maximum allowed is 250 handle pulls. Used for floor personnel to encourage these players to join slot clubs, participate in special events, etc.
109	Diverter Malfunction	Coins are not being diverted properly to the hopper (e.g., diverter is not in proper position).
110		<i>Not Used</i>
111	Slot Machine Needs a Fill	Generated if the DMK Fill feature is enabled and an employee requests a fill via the DMK keypad at the slot machine OR a fill card (FFF8) is inserted in the DMK card reader at the slot machine.
112	Auxiliary Fill Reimpressment	Generated if an auxiliary fill card (FFF4) is inserted in the DMK card reader at the slot machine.
113	XC Received from Meter Slot	An XC was received from a GMU with an address assigned to a meter machine (not SDS-compatible) in the slot file. XC revenue is logged in the adjustments file, but is not posted to revenue.
114	XC Received from Offline Slot	An XC was received from a GMU with an address assigned to an offline slot machine in the slot file. This category indicates that the machine is no longer on the floor. Revenue IS posted, in case the user forgot to update the status.
115	Game Back in Service	The GMU generates an XC46 (Game Back in Service) upon the first coin in or coin out after an outage exception code. The list of 6 “outage” exception codes is maintained in a table in the GMU.
116	XC Received from Unknown Slot	An XC was received from a GMU with an unassigned address. XC revenue is logged in the adjustments file, but is not posted to revenue.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
117	Coupon Value Table Changed	This message is generated by the GMU at power-up when it notes that the Coupon Value Table has been changed.
118	Machine-Paid Progressive Jackpot	A progressive jackpot has been won on a machine, and it is less than the machine-paid portion. So, the progressive is assumed to be entirely paid by the machine.
119	Unknown Tilt Code	An unknown tilt code (XC80) was received by the GMU from the slot machine.
120	Acceptor Large Buy-In	Too many bills changed at the note acceptor. Possible money laundering.
121	Acceptor Unable to Vend	The acceptor hopper level is too low to make change.
122	Acceptor Hopper Fill Needed	The acceptor hopper is empty and requires a fill.
123	Acceptor Cash Box Full	Sensor on cash box indicates that cash box is full.
124	Acceptor Not Responding	Communications lost with acceptor.
125	Acceptor Functioning Again	Communications normalized after message 126, indicating normal door position.
126	Auto Employee Sign-Off	When an employee's shift time expires and he hasn't signed his card off, SDS automatically signs it off. The length of the shift is set in Other Timing Parameters.
127	Acceptor Removed	An XC66 (Acceptor Removed) was received from the GMU.
128	Acceptor Cash Box Removed	Cash box was removed, presumably for service, filling, or bleeding purposes.
129	Acceptor Mechanism Jammed	The acceptor has a jam at the bottom of the path that the bills take to the cash box.
130	Illegal Acceptor Cash Box Door Opened	A bill acceptor cash box door has been illegally opened (e.g., not during bill drop).
131	XC Received From Variance Slot	This message is generated when an exception code is received from a machine designated in the slot file as a variance machine.
132	Acceptor Bad Pay	Incorrect amount changed by the note acceptor.
133	Bad EPROM ID	The EPROM ID sent from the slot machine does not match the EPROM ID stored in the slot file.
134	GMU Too Active	If a GMU sends more than 60 messages in 5 minutes, it is declared too active and is ignored until it sends a periodic report, a card is inserted, a hand-paid jackpot occurs, or 2 hours have elapsed.
135	Urgent DELREC Message Errors	DELREC (for Delayed Record) has too many records stored on disk. Contact Bally Systems for assistance.
136	Employee Needs Assistance	An employee assistance card has been inserted in the card reader. This indicates an employee without a radio is requesting assistance at the slot machine.
137		<i>Not Used</i>

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
138	Acceptor Cassette Jammed	The acceptor has a jam at the bottom of the path going to the cash box.
139	Acceptor Rejecting Bills	Generated when a patron repeatedly inserts a bill into the acceptor and it is rejected. The bill may be crumpled or the acceptor could have a problem. Possible tampering may also be indicated.
140	Acceptor Meters Jammed	The acceptor meters are not responding or recording note acceptor activity.
141-142		<i>Not Used</i>
143	Acceptor Runaway Hopper	Generated when the slot machine pays 2+ coins with no pay relay. The GMU sends the XC before the slot machine has stopped paying out.
144	DMK Fill Request Not Serviced	Generated if a fill has not been accomplished within the “DMK Fill Time Limit” specified in the SDS Parameter file.
145	Smart Hopper Enabled	Generated when the Smart Hopper feature is enabled in the SDS system.
146	Smart Hopper Disabled	Generated when the Smart Hopper feature is disabled in the SDS system.
147	Excessive Coins Removed	This message is sent when the number of coins removed for testing purposes is greater than the number indicated in the DMK Fill parameter <i>Maximum Coins to be Removed During Door Open</i> .
148	Hopper Recalibrated	Generated when a hopper recalibration is performed on a machine from a DMK or EPI device.
149	Hop Dif: SDS=XXX Hopper=YYY	Indicates that the minimum coin difference between Smart Hopper and SDS has been exceeded. The coin difference may be set through the Installed Hardware parameter <i>Minimum Coin Difference between SDS and Smart Hopper</i>
150	Change Person Request	The customer requests a change person via the DMK keypad.
151	Beverage Person Request	The customer has requested a beverage person via the DMK keypad.
152	Game Reserved	The customer reserves the game via the DMK keypad.
153	GMU Change – Invalid Emp.	An employee attempts to change the GMU contents via the DMK keypad but does not have the required system security access.
154-156		<i>Not Used</i>
157	DMK Fill Request – Invalid Employee	Generated if an unauthorized employee requests a fill at a DMK keypad.
158	DMK Fill Request	Generated if the DMK Fill feature is enabled and an employee requests the fill via the DMK keypad at the slot machine.
159	Coupon/Player Card Mismatch	A player attempts to use a coupon that requires a specific player card for redemption, and there is no card in the reader or the player card ID number is incorrect. In the case of a non-specific player card coupon, no player card is inserted in the card reader.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
160	Unregistered Player	If the Loss Limit function is enabled, a player card without an active loss limit has been inserted at this slot machine.
161	Jackpot – Invalid Amount of Zero	Generated when the GMU sends a jackpot XC with a jackpot amount of zero coins.
162	Jackpot – Invalid Coin In	Generated when the GMU sends a jackpot XC with an invalid jackpot multiplier.
163	Jackpot – Invalid Jackpot ID	Generated when the GMU sends a jackpot XC with an invalid jackpot identifier.
164	Coupon Not on File	If SDS Coupons are enabled, this message is sent when a patron attempts to redeem an unknown coupon at a slot machine (coupon record never created in SDS).
165	Coupon is Void	If SDS Coupons are enabled, this message is generated when a patron attempts to redeem a voided coupon at a slot machine.
166	Coupon Was Redeemed	If SDS Coupons are enabled, this message is generated when a patron attempts to redeem a previously redeemed coupon at a slot machine.
167	Coupon Over Retry Limit	If SDS Coupons are enabled, this message is sent when a patron unsuccessfully attempts to redeem a coupon at a slot machine more times than are specified in the parameter file. Indicates customer is having trouble redeeming his coupon.
168	Coupon Not Even Multiple	If SDS Coupons are enabled, this message is generated when a patron attempts to redeem a coupon at a slot machine whose denomination is not an even multiple of the coupon's denomination (e.g., an \$8 coupon on a \$5 slot machine.)
169	Coupon Over Credit Limit	If SDS Coupons are enabled, this message is sent when a patron attempts to redeem a coupon at a slot machine, but redeeming the coupon causes the game's credit meter to exceed its maximum limit.
170	Coupon Not Yet Valid	If SDS Coupons are enabled, this message is generated when a patron attempts to redeem a coupon before its activation date and time.
171	Coupon Expired	If SDS Coupons are enabled, this message is generated when a patron attempts to redeem a coupon after its expiration date and time.
172	Coupon Bad Slot File Info	If SDS Coupons are enabled, this message is generated when a patron attempts to redeem a coupon at a slot machine that is not in the slot file, or whose denomination is different than the denomination entered in the slot file.
173	Coupon Request Time-Out	The slot machine times out while waiting for approval from the system for a coupon that a patron was trying to redeem.
174	Bill Drop Period Start	Indicates that bill drop has started and all acceptor cash box door opens are legal.
175	Bill Drop Period End	Indicates that bill drop has ended and all acceptor cash box door opens are illegal.
176	Bill Drop Period - Time Out	Indicates that the bill drop time limit has expired, and the system has automatically ended bill drop. All bill acceptor cash box door opens are now illegal.
177	Slip Drop Completed	Indicates that slip drop has occurred. Slip drop has no end as it is simply a cut-off point for fill and jackpot slips.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
178	Auxiliary Fill Door Opened Too Long	Based on the door timeout value in the SDS parameter file, 1/4 of the slots on each CIU are checked every <i>x</i> minutes. The first time a slot is accessed, an auxiliary door open flag is set in the slot status file. The next time the same slot is accessed, if the auxiliary fill door bit is still set (e.g., not closed), this message is sent.
179	Acceptor Cassette Door Opened Too Long	Based on the door timeout value in the SDS parameter file, 1/4 of the slots on each CIU are checked every <i>x</i> minutes. The first time a slot is accessed, an auxiliary door open flag is set in the slot status file. The next time the slot is accessed, if this bill cassette door open flag is still set (e.g., not closed), this message is sent.
180	eCASH Drop Complete	This message is generated when the eCASH drop is run. The eCASH drop (like the slip drop) is merely a cut-off point. All slot cashless totals from the current day file are moved to the accounting file.
181-182		<i>Not Used</i>
183	eCASH Server Unavailable	An eCASH transaction is received, but eCASH services are not currently available (e.g., EFS is down, or eCASH is temporarily disabled by the EFS).
184	eCASH Withdrawal Error	An unexpected error occurred in the processing of a cashless withdrawal, which is further described in the dual.log .
185		<i>Not Used</i>
186	Promotional Jackpot For:	This message is generated when a manual jackpot is entered as a promotional jackpot, which does not impact revenue.
187	Possible Duplicate Coupon	This message is generated when the system detects that two coupons are entered at different slots at approximately the same time.
188	Smart Hopper Malfunction	Sent when Smart Hopper detects an abnormal hopper level. For example, if someone were to push down on the actual hopper, it would cause a significant increase in the recorded weight and Smart Hopper would process that as a malfunction of the hopper.
189	Low Hopper	Generated when the hopper coin level has fallen below its minimum. The minimum hopper threshold may be set through the calibration function on the EPI or DMK device at the machine.
190	Hopper Filled	Sent after a machine fill request has been completed.
191	Unrequested Fill Delivered	Generated when a fill is delivered to the wrong machine.
192	Requested Fill Not Delivered	Sent when the maximum time to perform a fill is exceeded. This exception code is controlled by the DMK Fill parameter <i>Maximum Time Allowed for a Fill to be Done in Minutes</i> .
193	Machine Fill Discrepancy	Generated when the percentage difference between the valid fill amount and the actual fill exceeds the percentage difference indicated by the DMK Fill parameter <i>% of Fill Variance Before Notifying Change Booth</i> .
		<i>194-202 are reserved for future use</i>
203	Invalid Coupon Amount	This message is generated by the GMU when the Coupon Value of an inserted coupon does not match the Coupon Value Table.

SDS Exception Codes and Change Booth Messages

CBMSG #	Terminal Message	Description
204	Jackpot to Credit Meter	A jackpot was diverted by the slot floor attendant to the slot machine credit meter.
205	Cash Ticket Jackpot Payout	Generated when a VLC Coin-Free Gateway ticket is redeemed. Message is sent to SDS by the VLC PC system.
206	Denom Set In Game May Be Wrong	Generated when the value of Bills-In divided by the denomination in the slot file does equal the vended Coin Out.
207	FE Slip not Created S/M XXXX	When a credit meter payoff is necessary, an FE slip should be automatically generated, so that the amount won't be subtracted from revenue twice. When a slip is not printed, the message FE Slip not Created S/M XXXX , where XXXX is the slot or asset number, is generated.
208	Bad Ticket Barcode/Amount	Generated when the amount on the ticket does not match the amount hashed in the ticket barcode.
209	Ticket Decryption Failure	Generated when a ticket message does not decrypt successfully.
		<i>210-254 are reserved for future use</i>
255	Time/Date	