



Program Summary Report: S-Plus Stepper Slot Version SP872

COMPLETE SET OF SLOT GAME CHIPS

- Game EPROM** Erasable Programmable Read-Only Memory. The game program is stored on this EPROM. The EPROM is a 27C512 device, and the label indicates S-PLUS GAME, the EPROM version (SP872), and the game type.
- Data EPROM** The companion data EPROM is a 27C64 device that identifies the reel-strip symbols and determines the game type, the pay table values, the number of reels, the maximum bet, and whether the game is a multi-line game, multi-coin game, scattered pay, or buy-a-pay game. The label indicates S-PLUS REEL and the SS number that identifies the pay table.
- Set Chip** IGT utility program SET026 is required to modify the denomination (option 6), enable/disable the bill acceptor (option 9), and enable/disable SAS Electronic Funds Transfer (EFT) (option 11). Before the EFT option can be selected with the set chip, perform the following steps: install the game chip, enter the self test mode, specify IGT SAS as the accounting system communication type, select a non-zero SAS communication address, and exit the self test mode. SET005, SET015, or SET017 may be used to set all denominations except \$0.01. SET017 may be used to set the EFT option.

NOTE: The EFT option may not be approved in all jurisdictions. Contact your IGT representative for more information.

GAME TYPES

Type 0 (no special features), Type 1 (Slam Dunk, Balloon Bars, etc.), Type 4 (Spin 'Til You Win), and Type 5 (4th of July).

FEATURES AND CAPABILITIES

- Bill Acceptor** Uses ID-023. Acceptable bill denominations are \$1, \$2, \$5, \$10, \$20, \$50, and \$100. If DIP switch 4 is on, the bills-to-hopper option is automatically enabled and all inserted bills are paid from the hopper, regardless of the game's credit type. If DIP switch 4 is off, the operator can specify in self test how inserted bills are paid. Payment can follow the player-initiated credit type, it can be set to override the game's credit type and always pay cash only, or it can be set to override the player-initiated credit type and always pay credits only. Use the set chip to enable or disable the bill acceptor.
- Bill Rejection Feature** Bills are rejected if any of the following conditions occur: a \$5 bill is inserted and the game denomination is \$2, a \$50 bill is inserted and the game denomination is \$20, the game denomination is higher than the bill denomination, or the credit value of the accepted bill plus any credits on the game exceeds the bill limit that is set in the self test mode.
- Credit Limit** When SAS EFT is disabled, the credit limit automatically matches the hopper limit, which can be set by DIP switch or in the self test mode. When the SAS

EFT option is enabled, the credit limit can be set to 9,999 or to follow the hopper limit in the self test mode.

Denomination Modifications

Requires the denomination set chip, unless the bill acceptor and SAS EFT option are disabled, in which case the denomination may be set in the self test mode. When the denomination is set to zero (none), the bill acceptor is disabled (if present), the game does not display link progressive amounts, all link progressive wins cause the game to go to a hand-pay lockup condition, and standalone progressive options cannot be enabled. The denomination can be set at \$0.01, \$0.05, \$0.10, \$0.25, \$0.50, \$1, \$2, \$5, \$10, \$20, \$25, \$50, \$100, or zero (none).

Electronic Funds Transfer

EFT is enabled with the set chip. To use this feature, the game must be connected to a SAS EFT system. Downloads are not accepted if they exceed the credit limit. Downloaded promotional credits are intended for game play only and cannot be uploaded or cashed. Promotional credits are wagered before any other accumulated credits. If any non-cashable credits are downloaded, all credits on the machine are considered non-cashable and can only be uploaded or played.

Hand-Pay Display

The amount to be hand paid by an attendant is displayed in the Credits and the Winner Paid windows. This information alternates with the amounts normally displayed in these windows. The hand-pay amount contains leading zeros instead of blanks so that it can be easily identified. This information is also displayed in the last 5 games recall. The tilt error codes 3100 (for an extra coin out) and 3200 (for a coin-out tilt) also appear in the alternating display if these conditions occur while the machine is in the hand-pay condition.

Information Systems Compatibility

SIS/SDS (SMART), Bally's serial SDS (XMISER), Wide Area Marketing Monitoring system (WAMM/CCOM), and IGT SAS with EFT capability.

Machine-Generated Attendant Request

A bill rejection limit can be set in the self test mode. It is designed to notify an attendant when a player is having difficulty inserting a bill into the bill acceptor. When the limit is reached, the change lamp is turned on automatically. Pressing the Change switch or inserting an acceptable bill clears the machine-generated attendant request. The Change switch should be pressed twice if the Change lamp was turned on by the player prior to the machine-generated attendant request.

Mechanical Meters

Counts coins in, coins out, drop, jackpots x 10, canceled credits, and games played.

Progressive Features/Displays

Link and/or standalone progressive, non-progressive, single level, single-level alternating, double-level progressive, and an 8 x 8 progressive display.

Reel Reset

To indicate that the reels are not spinning and stopping for a new game, the reels stop in reverse order (5, 4, 3, 2, 1) when resetting. The reels also stop in reverse order when the last-game-recall function is entered.

Reel Stops	Capable of handling 512 stops per reel.
Reel Tilt	If a tilt occurs while the reels are spinning, the reels spin very slowly until the tilt is cleared. When a tilt occurs any time other than during the random spinning period, the game soft tilts and automatically resets itself three times. The fourth tilt is considered a hard tilt and requires an attendant to reset the machine. The soft tilt counters are independent for each reel and are cleared after each game or door closure.
Two-Stage Candle	The top level signifies tilt/jackpot/change conditions; the bottom level signifies jackpot/door-open conditions. If the drop door is opened while the drop-door monitoring option is enabled, the door-open candle flashes at twice the normal door-open rate. If the game is disabled, both levels are lit.

CLEARING CMOS TILTS

A "61" error code appearing in the Winner Paid window indicates a CMOS error was encountered during a cold power up. A "61_2" error code appearing in the Winner Paid window indicates a recoverable CMOS memory error occurred. Clear these tilts by opening the door and pressing the self test switch for 2 to 3 seconds. A "61_1" error code appears in the Winner Paid window. To clear this condition, close the door and turn the jackpot reset key. Upon clearing this tilt condition, external CMOS memory is cleared by the game only if the "61" error code was originally displayed in the Winner Paid window. CMOS memory is not cleared if the "61_2" error code was originally displayed in the Winner Paid window.

DIP SWITCH OPTIONS

The dual in-line package switch selection chart is located on the processor board tray. The options for this machine are: hopper limit (switches 1 and 2), reel-spin sound (switch 3), bills-to-hopper enabled or bill acceptor payment set in self test (switch 4), progressive enable/disable (switch 5), high/low or alternating progressive (switch 6), and double or single progressive (switch 7). DIP switch 8 has no function in this version; the link and standalone progressive options are set in the self test mode. The DIP switch configuration is displayed in the self test mode.

SELF TEST MODE

Pressing the self test switch or the Bet One Credit player switch "pages" forward through the self test mode, and pressing the Play Max Credits player switch pages backward. To move through the options pages within page zero <0>, press the Change switch or turn the jackpot reset key. To change settings within an options page, press the Spin Reels player switch. During a tilt condition, only the WAMM machine address may be selected or altered. The numbers appearing below enclosed in < > represent the self test page number, [] represent the option number, and { } represent the setting. The self test pages appear in the following order:

Accounting System	
Communication Type	Determines the communication type on channel A (DCS port). Options are none {0}, Bally's serial SDS (XMISER) {1}, or IGT SAS (Standard and EFT) {2}.
SAS Communication	
Address <0>	This page is displayed only if the communication type is SAS. When using the SAS protocol, a machine address is required to distinguish one machine from another. The valid address range is {001} to {127}.

WAMM Machine
Address <0>

WAMM is always communicated on channel B (printer port). This page allows the setting of the WAMM address. The valid address range is {00} to {63}. Once the valid address is selected, the new value must be saved by pressing the Change switch. A bell sounds when the new address is accepted.

Player-Selectable
Credit <0> [5]

Options are standard credit or noncredit {0}, player-initiated credit {1}, and player-initiated noncredit {2}. The player-initiated credit option defaults to the noncredit mode when the credit meter remains at zero for more than 30 seconds, or when any accumulated credits are cashed out. The player-initiated noncredit option defaults to the credit mode if the game is idle for 30 seconds, and remains in the credit mode when credits are cashed out.

Mechanical Bell <0> [6]
Drop-Door Monitoring
Switch <0> [7]

Options are ring on hand pays only {0} or ring on all pays {1}.

This page is always displayed, but it can only be programmed if there is no communication on channel A or if the communication type is XMISER. (The drop-door monitoring option is automatically enabled with SAS communications.) Options are enabled {1} or disabled {0}. If enabled, opening the drop (cash) door causes the door-open candle to flash at twice the door-open rate, and the number of times the drop door is opened is monitored and displayed in the statistical data mode.

Bill Acceptor
Pay Mode <0> [8]

This option can be changed only if DIP switch 4 is off. Changes to this option are ignored when the credit type is noncredit. The options are to pay coins from the hopper {2}, to convert bills to credits {1}, or to follow the player-initiated credit {0}. If set to follow the player-initiated credit, bills are converted to credits if the player has selected the credit mode, or paid from the hopper if the player has selected the noncredit mode.

Bill Acceptor Enabled/
Disabled Display <0> [9]

Indicates whether the bill acceptor is enabled {1} or disabled {0}.

Extra Coins In
Option <0> [10]

This option can be modified only if the SAS EFT option is enabled. Determines how to handle the extra coins that are received after the maximum bet is reached. Options are pay from the hopper {0} or automatically apply toward the next game {1}.

SAS EFT Enable/
Disable Display <0> [11]

Indicates that the SAS EFT option is enabled {1} or disabled {0}.

Hand-Pay Display
Option <0> [13]

Options are enabled {1} or disabled {0}. If enabled, the hand-pay amount is displayed when the game goes into a hand-pay condition.

Bill Acceptor Tilt Mode Selection <0> [16]	<p>This option may be changed only if the bill acceptor is enabled. Determines how bill acceptor tilts are handled. If set to no tilt {0}, game play continues. If set to soft tilt {1}, game play continues and the tilt lamp flashes until the tilt is cleared. Soft tilts can be cleared by a valid bill transaction, by closing the door, by entering the self test mode, by entering the display meters function in the statistical data mode, or by playing door-open games. If set to hard tilt {2}, the bill acceptor is disabled, game play halts, and the tilt lamp flashes until the tilt is cleared. Hard tilts are cleared by opening and closing the main door.</p>
Country Code <0> [30]	<p>Determines the country code associated with the bill acceptor. Options are United States {37} or Canada {7}.</p>
Progressive Option Selection <0> [31]	<p>This page is displayed only if DIP switch 5 is set for progressive (on position). Determines the type of progressive for the primary level. If DIP switch 7 is set for double-level progressive (on position), the secondary level may also be set in this page. The options are: both levels link progressive {01}, primary-level link progressive, secondary-level standalone progressive {02}, both levels standalone progressive {03}, and primary-level standalone progressive, secondary-level link progressive {04}.</p>
Partial Pay on Top Award Option <0> [34]	<p>Determines whether a partial pay is made when the top award is hit. Options are enabled {1} or disabled {0}. If enabled, the amount paid is set in the partial pay selection page. If disabled, the entire win must be hand paid.</p>
Max Bet Auto Spin Option <0> [39]	<p>Determines whether the reels spin automatically when the maximum bet is reached and the Bet Max Credits player switch is pressed. Options are disabled {0} and enabled {1}.</p>
EFT Credit Limit Option <0> [50]	<p>Programmable only if SAS EFT is enabled; otherwise, this page is for display purposes only. Determines whether the credit limit is 9,999 {0}, or follows the hopper limit {1}.</p>
DIP Switch Configuration Display <0>	<p>Displays whether the processor board DIP switches are on {1} or off {0}. The status of DIP switches 1 through 4 appears in the Winner Paid window, and the status of DIP switches 5 through 8 appears in the Credits window.</p>
Input Tests <1>	<p>Tests whether inputs (coin-in optics, Bet One Credit player switch, etc.) are active or inactive.</p>
Output Tests <2>	<p>Tests whether outputs (Insert Coin lamp, Coin Accepted lamp, etc.) are active or inactive.</p>
Sound Test	<p>Winner Paid window = 50. Tests sounds (coin insertion, maximum coins in, etc.).</p>

Song Test This page is displayed only if the game is Type 4 or Type 5. Activates songs and allows selection of the song played during the Spin 'Til You Win mode.

Display Test <8> Tests illumination on the player digital display and verifies that the digital display is receiving correct signals from the processor board.

Hopper Test <3> Tests the hopper operation by paying out ten coins.

Pay Table Test <4> The game type (0, 1, 4, or 5) and reel-strip numbers are alternately displayed in the Winner Paid window. The EPROM version number is displayed in the Credits window. To test the pay table values, press the Spin Reels player switch. The award for a one-coin bet alternates with the award for the max coin bet in the Credits and Winner Paid windows.

Reel-Strip Test <5> Verifies that the symbols appearing on the reels are correct and that the reels spin to the correct stops.

Denomination Selection/ Display <6> Displays the current denomination. The denomination selection is available only if both the bill acceptor and EFT are disabled; otherwise, the set chip must be used.

Hopper Limit <7> Programmable only if DIP switches 1 and 2 are set for self test selection (on position); otherwise, this page is for display purposes only. Determines when hand pays and hopper pays occur. For example, if the hopper limit is set to 500 coins, the machine pays wins as follows:

Credits Accumulated	Single Win Amount	Action
0	600	Hand pay 600
400	200	Hopper pay 200

Bill Acceptor Credit Limit <7> Determines the maximum amount of credits that can be accumulated before the bill acceptor is disabled. The limit must be less than the hopper limit or \$2,500, whichever is less.

Partial Pay Selection <8> Determines the amount of coins to be paid from the hopper when a jackpot is hit, before a hand-pay condition occurs. The value cannot exceed the hopper limit.

Progressive #1 Selection <9> This page is displayed only if DIP switch 5 is set for progressive (on position), the primary level is specified as standalone in the progressive option selection page, and the denomination is set to a non-zero value. This page determines the progressive reset amount [1], maximum progressive amount [2], progressive increment percentage [3], and current progressive amount [4] for the single-level progressive.

Progressive #2 Selection <9> This page is displayed only if DIP switch 5 is set for progressive (on position), 7 is set for double-level progressive (on position), the

secondary level is specified as standalone in the progressive option selection page, and the denomination is set to a non-zero value. This page determines the progressive reset amount [5], maximum progressive amount [6], progressive increment percentage [7], and current progressive amount [8] for the double-level progressive.

Link Progressive
Display <9>

This page is displayed only if DIP switch 5 is set for progressive (on position) and at least one level is specified as link in the progressive option selection page. The Credits window indicates which levels are enabled {1} or {2}. Press the Spin Reels player switch to display progressive information. The Winner Paid window = first 3 digits of the progressive dollar amount, and the Credits window = last 4 digits of the progressive dollar amount (does not include decimal amounts). Both imbedded displays also show the progressive amount. Coins Played window = progressive level 1 or 2.

Rejected Bill Limit <11>

This page is displayed only if the bill acceptor is enabled. This limit determines the number of times bills can be rejected before the Change lamp is switched on. The range is 0 to 99. If set to 0, the Change lamp is never affected by rejected bills.

Out of Service Page <90>

If enabled {1}, this function renders the machine inoperative without turning the power off. The progressive displays and lamps are turned off, the change candle is lit, the door candle flashes at the door-open rate, and the digits 1 through 9 scroll across in the Winner Paid, Credits, and Coins Played windows. To place the machine in the out of service mode, close the main door while in this page. To place the machine back in service, open the main door and press the self test switch to enter out of service mode page again. The out of service mode can be disabled by using the Spin Reels player switch or by exiting out of this page.

STATISTICAL DATA MODE

Turn the jackpot reset key clockwise to enter the statistical data mode. Turn the jackpot reset key to move forward from one function to the next, and press the Play Max Credits player switch to move backward.

Display Meters Function <1>:

The Coins Played window shows the meter numbers 01 through 73. The Credits window and the Winner Paid window show the meter totals. Press the Spin Reels player switch to move forward through the meters. The meters appear in the following order:

- 01 Coins in (total wagers)
- 02 Coins out (total won)
- 03 Coins dropped (coins and bills)
- 04 Canceled credits (hand-paid cash out amount in coins)
- 05 Games played
- 06 Amount of jackpots in coins

07	Door opens
08	Games won
09	Games lost
10	Coin-in tilts
11	Coin-out tilts
12	Power resets
13	Hopper empty tilts
14	(Reserved)
15	Primary progressive hits
16	Games played since last door closed
17	Games played since last power up
18-27	Games played with from 1 to 10 coins in (number of coins in displayed depends on options)
28	\$1 bills accepted
29	\$5 bills accepted
30	\$10 bills accepted
31	\$20 bills accepted
32	Bills accepted
33	Coins or credits dispensed for bills
34	\$1 bills accepted since last meter reset
35	\$5 bills accepted since last meter reset
36	\$10 bills accepted since last meter reset
37	\$20 bills accepted since last meter reset
38	Bills accepted since last meter reset
39	Coins or credits dispensed for bills since last meter reset
40	Dollar value of all bills accepted since last meter reset
41	Dollar value of all bills accepted
42	Drop door opens
43	Credits played
44	Credits won
45	Credits paid
46	Physical coins inserted
47	Coins dispensed by the hopper
48	\$2 bills accepted
49	\$50 bills accepted
50	\$100 bills accepted
51	\$2 bills accepted since last meter reset
52	\$50 bills accepted since last meter reset
53	\$100 bills accepted since last meter reset
54	(Reserved)
55	Promotional credits downloaded
56	Non-cashable credits downloaded
57	Credits cashed out to the system

58	Cashable credits downloaded
59	Physical coin drop
60	Processor board battery tilts
61	(Reserved)
62	Reel #1 tilts
63	Reel #2 tilts
64	Reel #3 tilts
65	Reel #4 tilts
66	Reel #5 tilts
67	Reel mechanism tilts
68	Bill acceptor stacker jams
69	Bill acceptor cash box removed
70	Bill acceptor cash box full
71	Bill acceptor hardware tilt
72	Bill acceptor reverse bills
73	Secondary progressive hits

Last 5 Games Recall Function <2>:

When this function is entered, the reels spin and stop in reverse (5, 4, 3, 2, 1) order. Pressing the Spin Reels player switch causes the reels to spin to the position of the previous game, beginning with the most recent game. Winner Paid = the number and the virtual position of the reel before any "nudging" is done. Credits = game being displayed. If the game is Type 4 or Type 5, the Credits window also indicates either 0 (standard game) or 1 (free spin). After the last reel has been displayed, the Coins Played, Winner Paid, and Credits windows contain their normal information for the last game. The hand-pay information is also displayed during the last games recall if the hand-pay display option is enabled and a hand pay occurred.

Bill Acceptor Transaction <9>:

All LED displays show 9 until the Spin Reels player switch is pressed. Coins Played = last bill transaction 1 (most recent) through 5 (oldest). Winner Paid = number of coins dispensed or credits given beginning with the most recent transaction. Credits = bill denomination.

IGT Service Utility Information <3>:

Coins Played = 3.

Progressive Jackpot Recall <4>:

Winner Paid = a number from 50 to 1. The progressive display shows the amount won, beginning with the most recent jackpot awarded.

Electronic Funds Transfer (EFT) Transaction <5> through <9>:

Turn the jackpot reset key to view each category; press the Spin Reels player switch to view the last five transactions within each category. The category is displayed in the Coins Played window: 5 = downloaded non-cashable credits, 6 = downloaded cashable credits, 7 = downloaded promotional credits, 8 = cash outs to the system, 9 = forced cash outs to the hopper. The far left digit in the Winner Paid window = 1 (acknowledgment received, transaction processed) or 0 (no acknowledgment, transaction not processed).

The far right digits in the Winner Paid window indicate the transaction status: 00 = successfully completed, 01 = no game denomination set, 03 = downloaded credit not a multiple of game denomination, 04 = downloaded credit exceeds credit limit. The Winner Paid window also alternately displays the transaction number. The Credits window = number of credits transferred, alternating with the transaction reference number; 1 represents the most recent transaction and 5 represents the oldest.

Clearing Resettable Bill Meters <10>:

The resettable bill meters keep a count of the bill acceptor transactions since the last time the meters were cleared. If any of the resettable bill meters is not equal to zero, {8888} is displayed in both the Credits and Winner Paid windows. Press the Spin Reels player switch to clear the resettable meters. {0000} is displayed in the Credits and Winner Paid windows when the meters are cleared.

SAS EFT Meters Breakdown <12>:

If the main door is open, this function is not available for viewing. Pressing the Spin Reels player switch advances through the two SAS EFT meters. If the Coins Played window = 1, the Credits window = promotional credits. If the Coins Played window = 2, the Credits window = buffered credits (bill transactions, cashable downloads, and non-cashable downloads).

REFERENCES

Refer to the appropriate IGT publication for detailed information about S-Plus software and error resolutions: *Game Software: S-Plus Products* p/n 821-206-0x, *Troubleshooting: Game Machines* p/n 821-283-0x, or *S-Plus Diagnostic Cards Set* p/n 821-154-0x. Refer to the Reel-Strip Listing for exact pay table information and symbol alignment on each reel.

For 24-hour technical assistance, or for a glossary of gaming terms, call our service hotline at 800-688-7890.

For additional information or to order manuals, contact IGT Customer Service, 9295 Prototype Drive, Reno, Nevada, (USA) 89511-8986; telephone 702-448-0364, between 8 a.m. and 4 p.m. PST; FAX 702-448-0675.

For viewing and downloading technical information, access the on-line Product Information Network at 800-448-1221.

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