NEVADA GAMING CONTROL BOARD
Test Requirements for Gaming Devices used on Cashless Wagering Systems

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Gaming Device Use on a Cashless Wagering System Test Requirements

I. INTRODUCTION

This document outlines the test requirements for gaming device use on an approved cashless wagering system. The goal of this document is not to list specific tests and how to perform them, but to provide a general outline of what needs to be done. Any testing agency using this document will need to create their own specific test procedures and reports. Procedures and report formats must be submitted for Board approval prior to the commencement of testing. All reports that are to be submitted to the Gaming Control Board must detail how each test was performed and the specific results.

II. TEST DESCRIPTION

System Description

    a) What system is the device being tested on?

    b) What version of system is being used?

Gaming Device Set-Up

    a) What gaming device software is utilized?

    b) What interface hardware is utilized to interface the system?

    c) What interface software is utilized to interface the system?

    d) What bill acceptor and printer is being utilized in the device under test?
        Note: If more than one combination of printer and acceptor is submitted each combination must be tested under section III. DEVICE INTEGRITY of this document.

    e) List available validation methods. (Enhanced/Standard/Enhanced Secured/System)

    f) List available cashout methods. (Hopper/Printer/System) (Split-pay/Partial-Pay etc.)

    g) Is any special equipment needed to configure the device? (i.e., PC)

III. DEVICE INTEGRITY

Electrostatic Discharge (ESD)

a) When connected to the system the device is required to exhibit total immunity to electrostatic discharges of 20, 000VDC on all player exposed areas.

b) When connected to the system the device is required to exhibit a capacity to recover and complete any interrupted transaction without loss or corruption of any stored or displayed information and without component failure when exposed to electrostatic discharges of 27,000VDC on all player exposed areas.

Voucher In

When accepting and escrowing a voucher, record how the device and the system respond to the following interruptions or faults if they occur at any time during the process. Vouchers should either maintain a valid status on the system and be returned or the appropriate credit amount should be vended with the voucher being stacked and redeemed on the system.

a) Power loss
b) Electrostatic Discharge
c) Stringing
d) Insertion of a foreign object (business card)
e) System Link Down
f) Communication Time Out
g) Game initiation
h) Cashout of Existing Credits
i) Coin-in error
j) Coin-out error
k) Door open
l) Reel tilts
m) Gaming Device Disabled by System

Voucher Out

When cashing out credits to a voucher record how the device and system respond to the following interruptions or faults if they occur at any time during the process. If a printed voucher is redeemable on the system by barcode reader or manual entry it is deemed a valid voucher and should never be reprinted or replaced (duplicate ticket.)

    a) Power loss
    b) Electrostatic Discharge
    c) Bill or Voucher Insertion
    d) System Link Down
    e) Communication Time Out
    f) Game initiation
    g) Coin in
    h) Coin-in error
    i) Coin-out error
    j) Door open
    k) Reel tilts
    l) Gaming Device Disabled by System

Error Conditions

If a print is attempted and a complete or an incomplete voucher has **not** been printed or if a replacement voucher can not be printed, the device must complete the cashout by another means (handpay, hopper, etc.) The device may offer the patron the ability to re-enter the game-play state instead of cashing out.

    a) The device must detect and display the following error conditions, which may either be cleared by an attendant or cleared automatically once the condition no longer exists. Game play may continue.

        i. Printer Low on Paper. A low paper condition must be detected following the completion of a voucher print.

        ii. Presentation Error.

    b) The device must detect and display the following error conditions, which may only be cleared by an attendant.

        i. Printer Out of Paper. A paper out condition must be detected prior to print, following a print or upon any significant event (power reset, door just closed, etc.)

ii. Paper Jam. A paper jam condition must be monitored at all times during the print process. This condition can be tested by blocking the presentation bezel, stopping paper feed during print, and not allowing paper to feed into print head.

iii. Print Failure. A print failure condition must be monitored at all times during the print process. A Replacement voucher may be printed once failure condition has been cleared.

Security

a) Verify the device has a lockable protective cover over the circuit boards that contain programs and circuitry used to interface the system.

b) Verify the device is designed to allow any interface components to be mounted in a secure area of the gaming device.

c) Verify if the device implements a secure communication method between the gaming device and any interface components (encryption, etc.?)

IV. PROTOCOL IMPLEMENTATION

Testing the implementation of the system protocol is required. All commands and responses must be tested and recorded. The following is an outline based on SAS 5.02.

Communication Specifications

a) Does the device meet the communication specifications for machine addressing?

b) Does the device meet the communication timing specifications?

i) Gaming Machine Response Time

ii) Inter-Byte Delay Time

iii) Polling Rate

General Poll Exception Codes*

Test device to determine which general exception codes are supported by the gaming device.

Long Poll Commands*

Test device to determine which long poll commands are supported by the gaming device.

* When reporting gaming device implementation of exception code and long poll commands it is recommended that if they be reported by feature (Bonusing, Funds Transfers, Voucher Transactions (TITO), etc.)

V. AUDIT REQUIREMENTS

Meters

a) Verify the device has a meter labeled "Voucher In" that accumulates the total of all slot machine wagering vouchers accepted by the machine.

b) Verify the device has a meter labeled "Voucher Out" that accumulates the total of all slot machine wagering vouchers and payout receipts issued by the machine.

Voucher Format

Do the wagering vouchers and coupons display the following information?

a) Licensee name, city, and state; Gaming device number;

b) Date and time of issuance;

c) Alpha and numeric dollar amount;

d) Sequence number;

e) Validation number;

f) Secondary validation number vertically printed on the leading edge of the ticket;

g) Unique identifier (e.g., bar code);

h) Transaction type;

i) Expiration Date when voucher will expire.

Voucher In

Vouchers should only be accepted when the game is communicating to the system. Vouchers should be rejected when the system link is down:

a) When inserting vouchers into the gaming device:

    1) Does the gaming device have a validating voucher message?

    2) Verify the "Voucher In" meter properly updates.

    3) Verify the voucher event log properly updates with the voucher redeemed information. (Date/Time of redemption, amount of voucher, validation number).

    4) Verify expired vouchers are rejected.

    5) Verify the gaming device indicates rejection condition. (Voucher Redeemed, Voucher Invalid, etc.).

    6) Verify that vouchers from other gaming devices on the same system are accepted by the device under test.

    7) Verify redeemed vouchers are rejected.

    8) Verify that once the voucher is escrowed it is either rejected or accepted within 4 seconds.

b) Credit based games:

    1) Verify the voucher amount is credited correctly when it is divisible by the hopper denomination.

    2) When a voucher is not divisible by the hopper denomination verify that the whole coin amount is credited to the device with a change ticket immediately generated for the residual credits or that the residual amount is displayed at all times on a currency based meter.

    3) Verify that when a change ticket is generated the amount is added to the "Voucher Out" meter.

    4) Verify that vouchers with a value less than the hopper denomination are rejected.

c) Currency based games:

1) Verify that the voucher amount is credited correctly.

Voucher Out

a) When printing vouchers from the gaming device:

1) Verify the "Voucher Out" meter is properly updated.

2) Verify the voucher event log is properly updated with the voucher redeemed information. (Date/Time of print, amount of voucher, validation number)

3) Verify that vouchers from the gaming device under test are accepted by other devices on the same system.

4) Verify that once a cashout is initiated the printer initiates the print within 4 seconds.

b) With the link up and partial pay from hopper **enabled**, cashout an amount **not** divisible by the hopper and record device response where:

1) Cashout Amount < Hopper Cashout Limit. The amount should be paid by voucher.

2) Hopper Cashout Limit < Cashout Amount < Credit Limit. The Hopper Cashout Limit should be paid from the hopper with the remainder paid by voucher.

3) Cashout Amount < Hopper denomination. The Cashout Amount should be paid by voucher.

a) With the link up and partial pay from hopper **enabled**, cashout an amount divisible by the hopper and record device response where:

1) Cashout Amount < Hopper Cashout Limit. The entire amount should be paid by the hopper.

2) Hopper Cashout Limit < Cashout Amount. The hopper cashout limit should be paid by the hopper with the remainder paid by voucher.

b) With the link up and **partial pay from hopper disabled**. Cashout an amount from the hopper. The entire amount should be paid by voucher.

A link down condition can be caused by any communication break in the system. Any time a handpay condition occurs while the link is down, verify that the handpay information is correctly communicated once the link is reestablished.

c) With the **link down** and **partial pay from hopper enabled** cashout an amount **not** divisible by the hopper and record device response where:

  1) Cashout Amount < Hopper Cashout Limit. The entire amount should be handpay.

  2) Hopper Cashout Limit < Cashout Amount. The hopper cashout limit should be paid by the hopper with the remainder paid by handpay.

  3) Cashout Amount < Hopper denomination. The amount should be paid by handpay.

f) With the **link down** and **partial pay from hopper enabled** cashout an amount divisible by the hopper and record the device response where:

  1) Cashout Amount < Hopper Cashout Limit. The entire amount should be paid by the hopper.

  2) Hopper Cashout Limit < Cashout Amount. The hopper cashout limit should be paid by the hopper with the remainder paid by handpay.

g) With the **link down** and **partial pay from hopper disabled** cashout an amount from the hopper. The entire amount should be paid by handpay.

VI. THREE-DAY TICKETING AUDIT – TEST PLAN

The ticketing system must be configured and set-up exactly as it will be used in a casino environment. The set-up must include a minimum of two slot machines, a cashier redemption station and all available soft count components. Perform the following audit procedures each day for three consecutive dates. Set the ticket expiration date for the third day.

Game/Ticketing Functions

a) Read and record the beginning "voucher in" and "voucher out" meter on each slot machine. This must be the actual machine soft meter. The meter cannot be read through the machine's interface board (e.g., by using the Acres "Nines"card).

b) Perform the following transactions for each machine:

1) Generate a minimum of 50 tickets of varying amounts at each machine.

2) Generate a minimum of 10 change tickets at each machine (if applicable).

3) Redeem at least 50% of the tickets at the machines (same and different machines).

4) Redeem at least 10% of the tickets at cashier terminals.

5) Leave at least 10% of the tickets unredeemed.

6) Attempt to redeem previously redeemed tickets.

7) Attempt to play expired tickets on the third day.

8) Create void transactions.

c) Read and record the ending "voucher in" and "voucher out" meter on each slot machine.

d) Calculate the difference between the beginning and ending "voucher in" and "voucher out" meters.

Ticket Drop/Count

a) Remove all tickets from each slot machine.

b) Count tickets by machine using all available system methods (e.g., automatic ticket counter, hand -held scanner or manual entry).

Comparison of Meter and Ticket Information to Reports

a) Print all system ticketing reports.

b) Compare the change in the "vouchers out" meter to an issuance by machine report.

c) Compare the change in the "vouchers in" meter to a redemptions by machine report and a tickets dropped (soft count) report. Also compare the actual tickets dropped/counted to a tickets dropped (soft count) report.

d) Compare the tickets redeemed by cashier to a redemptions by cashier report.

e) Compare unredeemed tickets to an outstanding tickets/liability report.

f) Compare any voided tickets to a voided tickets report.

g) Compare expired tickets to an expired tickets report.

h) Check for continuous ticket sequence numbers by machine on a sequential ticket report.

i) Verify all ticketing information on any other available system ticketing reports by comparing to game meters and actual tickets.

VII. Related Documents

c) Approval of a Gaming Device For Use on a Cashless Wagering System Submission Policy.

d) Gaming Device Use on an Approved Cashless Wagering System Approval Request.