

# Technical Standards for Video Gaming Terminals in Illinois Version 1.5

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# CHAPTER 1

## *1.0 Standards for Video Gaming Terminals*

These Technical Standards for Video Gaming Terminals (VGTs) are intended to apply to devices which are not governed by riverboat gaming regulations in the State of Illinois. Instead, these standards apply to VGTs as authorized under the Illinois Video Gaming Act, 230 ILCS 40/1-40/85.

Per the Illinois Video Gaming Act, a “VGT” is an electronic video gaming machine that plays or simulates the play of a video game authorized by the Gaming Board, upon the insertion of cash. Authorized video games include, but are not limited to, video poker, line up, and blackjack. The “VGT” must utilize a video display and microprocessors in which the player may receive free games or credits that can be redeemed for cash. A “VGT” does not include a machine that directly dispenses coins, cash, or tokens or is for amusement purposes only.

### **1.1 Physical Security**

**1.1.1 General Statement.** A Video Gaming Terminal shall be sufficiently robust to resist forced entry.

### **1.2 Video Gaming Terminal and Player Safety**

**1.2.1 General Statement.** Electrical and mechanical parts and design principals of the Video Gaming Terminal may not subject a player to any physical hazards.

### **1.3 Hardware Requirements-Other**

**1.3.1 General Statement.** Each Video Gaming Terminal shall meet the following hardware requirements:

- a) Microprocessor Controlled. Be controlled by one (1) or more microprocessors or the equivalent in such a manner that the game outcome is completely controlled by the microprocessor.
- b) On/Off Switch. An on/off switch that controls the electrical current shall be located in a place which is readily accessible within the interior of the Video Gaming Terminal so that power

cannot be disconnected from outside of the Video Gaming Terminal using the on/off switch. The on/off positions of the switch shall be labeled.

- c) Temperature and Humidity. Video Gaming Terminals can be expected to operate in a variety of extreme environments. In the event that the designed operational parameters of a Video Gaming Terminal are exceeded, the Video Gaming Terminal, if incapable of continued proper operation, shall perform an orderly shutdown without loss of game status, accounting, and security event data. The manufacturer should supply any documentation if the Video Gaming Terminal has had temperature and humidity testing against any recognized standard.
- d) Static Discharge and Electromagnetic Interference. Video Gaming Terminals must not be adversely affected by static discharge of up to 27kV, or electromagnetic interference.

## **1.4 Cabinet Wiring**

**1.4.1 General Statement.** The Video Gaming Terminal shall be designed so that power and data cables into and out of the terminal can be routed so that they are not accessible to the general public. This is for game integrity reasons only. Security-related wires and cables that are routed into a logic area shall be securely fastened within the interior of the terminal.

## **1.5 Video Gaming Terminal Identification**

**1.5.1 General Statement.** A Video Gaming Terminal shall have a not easily removable, without leaving evidence of tampering, identification badge, permanently affixed to the exterior of the cabinet by the manufacturer, and this badge shall include the following information:

- a) The manufacturer;
- b) A unique serial number;
- c) The Video Gaming Terminal model number (if applicable); and
- d) The date of manufacture.

## **1.6 Tower Light**

**1.6.1 General Statement.** The Video Gaming Terminal shall have a light located conspicuously on top of the Video Gaming Terminal that automatically illuminates when a player has won an amount or is redeeming credits that the Video Gaming Terminal cannot automatically pay (i.e., printer error or ticket validation system unavailable), an error condition has occurred (including 'Door Open'), or a 'Call Attendant' condition has been initiated by the player. For terminals such as the 'bar-top style', it is permissible for the tower light to be shared among other Video Gaming Terminals or be substituted by an audible alarm.

## **1.7 Manipulation of Power Supply**

**1.7.1 Surges.** The Video Gaming Terminal shall not be adversely affected, other than resets, by surges or dips of  $\pm 20\%$  of the supply voltage.

**NOTE:** *It is acceptable for the equipment to reset provided no damage to the equipment or loss or corruption of data is experienced in the field. Upon reset, the game must return to its previous state. It is acceptable for the game to return to a game completion state provided the game history and all credit and accounting meters comprehend a completed game.*

## **1.8 External Doors/Compartments Requirements**

### **1.8.1 General Requirements.**

- a) Doors shall be manufactured of materials that are suitable for allowing only legitimate access to the inside of the cabinet (i.e., doors and their associated hinges shall be capable of withstanding determined efforts to gain access to the inside of the Video Gaming Terminal and shall leave physical evidence of tampering if such an attempted entry is made);
- b) The seal between the cabinet and the door of a locked area shall be designed to resist the entry of objects;
- c) All external doors shall be locked and monitored by door access sensors, which when opened shall cease game play, disable all acceptance, and enter an error condition, which at a minimum shall illuminate the tower light and send the error condition to the Central Communications System (CCS) (a centralized command, control, and monitoring system to

- which all VGTs connect and which monitors VGT operation and collects accounting and security information.);
- d) It shall not be possible to insert an object into the Video Gaming Terminal that will disable a door open sensor when the Video Gaming Terminal's door is shut, without leaving evidence of tampering; and
  - e) The sensor system shall register a door as being open when the door is moved from its fully closed and locked position, provided power is supplied to the terminal.

## **1.9 The Logic Door and Logic Area**

**1.9.1 General Statement.** The logic area is a separately locked cabinet area (with its own locked door within the main area protected by the external main door), which houses electronic components that have the potential to significantly influence the operation of the Video Gaming Terminal. There may be more than one (1) such logic area in a Video Gaming Terminal. The logic door(s) shall be monitored.

**1.9.2 Electronic Components.** Electronic component items that are required to be housed in one (1) or more logic areas are:

- a) CPUs (Central Processing Unit – The part of an electronic device that contains the circuitry to interpret and execute program instructions) and any program storage device that contains software that may affect the integrity of gaming, including but not limited to the game, accounting, system communication, and peripheral firmware devices involved in or which influence the operation and calculation of game play, game display, game result determination, or game accounting, revenue, or security;
- a) Communication controller electronics and components housing the communication storage device. Any exceptions will be evaluated on a case-by-case basis; and
- b) The memory back-up device.

## **1.10 Program Memory and Non-Volatile Devices Used to Store Program Memory**

**1.10.1 Non-Volatile Memory.** The Video Gaming Terminal shall have the ability to retain data for the electronic meters and shall be capable of maintaining the accuracy of all information required for one hundred and eighty (180) days after power is discontinued from the Video Gaming Terminal;

**1.10.2 Battery Backup.** For VGTs utilizing a rechargeable battery type, battery backup shall recharge itself to its full potential in a maximum of twenty-four (24) hours. The shelf life of the rechargeable battery shall be at least five (5) years; Non-rechargeable batteries with a shelf life of at least five (5) years are also allowed;

**1.10.3 Low Battery Condition.** Non-volatile memory that uses a back-up power source to retain its contents when the main power is switched off shall have a detection system which will provide a method for software to interpret and act upon a low battery condition before the battery reaches a level where it is no longer capable of maintaining the memory in question.

**1.10.4 Non-volatile Memory Reset.** Clearing non-volatile memory shall require secure access to the locked logic area or some other locked door(s), such as a main external cabinet door, or another secure method that can be controlled by the Illinois Gaming Board.

**1.10.5 Function of Non-volatile Memory Reset.** Following the initiation of a non-volatile memory reset procedure (utilizing a certified method approved by the Illinois Gaming Board), the game program shall execute a routine, which initializes all bits in non-volatile memory to the default state. For games that allow for partial non-volatile memory clears, the methodology in doing so must be accurate.

**1.10.6 Default Reel Position or Game Display.** The default reel position or game display after a non-volatile memory reset shall not be the advertised top award on any selectable line. The default game display, upon entering game play mode, shall also not be the advertised top award. This applies to the base game only and not any secondary bonus devices. This does not apply to games or paytables selected after the initial game play.

**1.10.7 Configuration Settings.** It shall not be possible to change a configuration setting that causes an obstruction to the electronic accounting meters without a non-volatile memory clear. Notwithstanding, a change to the denomination must be performed by a secure means, which includes access to the locked logic area or other secure method provided that the method can be controlled by the regulator.

**Note:** *The above requirement is not intended to preclude the case where a player is allowed to change or select a previously configured game denomination.*

**1.10.8 Program Identification.** All program storage devices, including ROMs (Read Only Memory), EPROMs (Erasable Programmable Read Only Memory), FLASH ROMs, DVD (Digital Video Disk), CD-ROM

(Compact Disk), Compact Flash and any other type of Program Storage Devices (PSD – An electronic device or media on which one or more computer program is stored) which do not have the ability to be modified while installed in the Video Gaming Terminal shall be clearly marked with sufficient information to identify the software and revision level of the information stored in the devices. Program IDs shall be consistently marked in the exact format submitted to the Independent Test Laboratory (ITL) and to the IGB.

## **1.11 Contents of Critical Memory**

**1.11.1 General Statement.** Critical memory is used to store all data that is considered vital to the continued operation of the Video Gaming Terminal and/or system. This includes, but is not limited to:

- a) All electronic meters required in “Electronic Accounting and Occurrence Meters” Section 2.9.9, including bill and payout ticket data and power up and door open metering;
- b) Current credits;
- c) Video Gaming Terminal/game configuration data;
- d) Information pertaining to the last ten (10) plays with the game outcome (including the current game, if incomplete). VGTs offering games with a variable number of free games, per base game, must satisfy this requirement by providing the capability to display the last 50 free games in addition to each base game;
- e) Any payable configuration information residing in memory;
- f) Software state (the last normal state, last status or tilt status the VGT software was in before interruption); and
- g) At a minimum, a log of the last 100 significant events shall be kept in critical memory.

**NOTE:** *All of the above shall be checked for corruption. If values are corrupt, game play shall cease and at a minimum display an appropriate correlating error message.*

**1.11.2 Significant Events.** At a minimum, the following significant events must be logged by the VGT:

- a) Power resets or power failure;
- b) Door openings (any door that accesses a critical area of the VGT);
- c) Bill acceptor errors:
  - i. Stacker Full; and
  - ii. Bill Jam.
- d) VGT low non-volatile memory battery error;



- e) Reel Spin Errors (if applicable with individual reel number identified);
- f) Printer Errors:
  - i. Printer Empty/Paper Low; and
  - ii. Printer Disconnect/Failure.

## **1.12 Maintenance of Critical Memory**

**1.12.1 General Statement.** Critical memory storage shall be maintained by a methodology that enables errors to be identified. This methodology may involve signatures, checksums, partial checksums, multiple copies, timestamps and/or effective use of validity codes.

**1.12.2 Comprehensive Checks.** Comprehensive checks of critical memory shall be made following game initiation but prior to display of the game outcome to the player. Critical memory shall be either continuously monitored for corruption, or comprehensive checks shall occur at the following significant events:

- a) VGT power-up; and
- b) Main door opening.

**Note:** *It is recommended that a triple redundancy check be implemented. Methodologies for performing such checks shall detect 99.99 percent of all possible failures including but not limited to items defined in section 1.11.1 and at a minimum enable errors to be identified.*

**1.12.3 General Statement.** An unrecoverable corruption of non-volatile memory shall result in an error. Non-volatile memory should not be cleared automatically and shall result in a tilt condition, which identifies the error and causes the VGT to cease further function. An unrecoverable non-volatile memory error shall require a full non-volatile memory clear performed by an authorized person (e.g., licensed technician / handler).

**1.12.4 Non-critical NV-memory and PSD Space.** Non-volatile memory space that is not critical to Video Gaming Terminal security (e.g., video or sound) is not required to be validated.

## 1.13 Program Storage Device Requirements

**1.13.1 General Statement.** All Program Storage Devices (computer media used to store VGT control programs), including EPROMs, ROMs, Flash-ROMs, DVDs, CD-ROMs, optical disks, compact flash cards, hard drives, solid state drives, USB (Universal Serial Bus) drives, and any other type of Program Storage Device shall:

- a) Be housed within a fully enclosed and locked logic compartment;
- b) Be clearly marked with sufficient information to identify the software and revision level of the information stored in the device. In the case of media types on which multiple programs may reside, it is acceptable to display this information via an attendant menu. Program IDs shall be consistently marked in the exact format submitted to the Independent Test Laboratory and to the IGB.;
- c) Validate themselves during each processor reset;
- d) Validate themselves the first time they are used; and
- e) Employ write protection.

**1.13.2 Optical Storage.** CD-ROM, DVD, and other optical disk-based Program Storage shall:

- a) Not be a re-writeable disk; and
- b) The session shall be closed to prevent any further writing.

**NOTE:** *All forms of write-protection will be reviewed on a case by case basis by the Independent Test Laboratory in conjunction with the IGB. The above regulation is not intended to preclude the possible future use of client-server systems so long as any such system has been approved for use by the Illinois Gaming Board prior to any such implementation.*

### **1.13.3 Control Program Requirements.**

A Control Program is defined as the software that operates the critical and primary functions of the Video Gaming Terminal and which directly impacts the integrity of the terminal.

- a) EPROM-based Program Storage. Video Gaming Terminals which have control programs residing in one or more EPROMs must employ a mechanism to verify control programs and

data. The mechanism must use, at a minimum, a checksum; however, it is recommended that a Cyclic Redundancy Check (CRC) be used (at least 16-bit).

- b) Non-EPROM-based Program Storage. Video Gaming Terminals which have control programs residing in any non-EPROM based program storage shall provide a mechanism for the detection of unauthorized and corrupt software elements, upon any access, and subsequently prevent the execution or usage of those elements by the VGT. The mechanism must employ a hashing algorithm which produces a message digest output of at least 128 bits. In the event of a failed authentication, after the VGT has been powered up, the terminal should immediately enter an error condition and display an appropriate error. This error shall require authorized intervention to resolve and the error shall not clear until the data authenticates properly, following the operator intervention or the media is replaced or corrected, and the VGT's memory is cleared.
- c) Alterable Program Storage. Video Gaming Terminals which have control programs residing in any alterable program storage shall meet the following rules in addition to the requirements outlined in items (b) immediately above:
  - i. Employ a mechanism which tests unused or unallocated areas of the alterable media for unintended programs or data and tests the structure of the media for integrity. The mechanism must prevent further play of the Video Gaming Terminal if unexpected data or structural inconsistencies are found.
  - ii. Employ a mechanism for keeping a record any time a control program component is added, removed, or altered on any alterable media. The record shall contain a minimum of the last ten (10) modifications to the media and each record must contain the date and time of the action, identification of the component affected, the reason for the modification and any pertinent validation information.

**Note:** Alterable program storage does not include memory devices typically considered to be alterable which have been rendered "read-only" by either a hardware or software means.

**Note:** All control program verification mechanisms contemplated by this section will be reviewed on a case by case basis by the IGB and the independent testing laboratory.

**1.13.4 Program Identification.** Program storage devices which do not have the ability to be modified while installed in the Video Gaming Terminal during normal operation shall be clearly marked with sufficient information to identify the software and revision level of the information stored in the devices. Program IDs shall be consistently marked in the exact format submitted to the Independent Test Laboratory and to the Illinois Gaming Board.

**1.13.5 Independent Control Program Verification.** The VGT shall have the ability to allow for an independent integrity check of the terminal's software from an outside source and is required for all control programs that may affect the integrity of the game. This must be accomplished by being authenticated by a third-party device, which may be embedded within the game software (see NOTE below), by having an interface port for a third-party device to authenticate the program storage media, or by allowing for removal of the media such that it can be verified externally. This integrity check will provide a means for field verification of the software to identify and validate the program. The test laboratory, prior to device approval, shall evaluate the integrity check method.

**Note:** If the authentication program is contained within the game software, the manufacturer must receive written approval from the test laboratory prior to submission.

**1.13.6 Software Verification.**

- a) The Central Communications System must initiate a signature validation command whenever any Video Gaming Terminal is enrolled (i.e., connected to, or made known to, the Central Communications System);
- b) If a Video Gaming Terminal fails the signature validation test, it must not be possible to enable that VGT into a playable state.

**Note:** *The above requirements are not intended to exclude the use of alternative secure methods approved by the Illinois Gaming Board. For example, software verification that is supported by industry standard communication protocols.*

**1.13.7 Integration with the Central Communications System.**

- a) The Video Gaming Terminal must be compatible with the Central Communications System to provide for game software image storage. A "game software image" is a binary file consisting of all critical software components used during the operation of the VGT. The game software

image is issued to perform a system-requested 'ROM signature' comparison. All game software images that exist in the Video Gaming Terminal must also be stored in the Central Communications System. The game software images stored in the Central Communications System are used for signature calculations in accordance with the software verification as described in section 1.13.6 and are subsequently used to validate the signature calculation results reported from the Video Gaming Terminal. If the image used for validating the Video Gaming Terminal software in accordance with the signature validation check as described in section 1.13.6 is comprised of more than one program or device (for example, a VGT may have one main program and one game program) the Central Communications System will have a method to allow the licensed technician / handler to load each component individually and the Central Communications System must combine the individual images based upon the scheme supplied by the Video Gaming Terminal manufacturer to create the combined image.

- b) The Video Gaming Terminal must default to a disabled state until fully enrolled and activated by the Central Communications System. Furthermore, the Video Gaming Terminal must disable at any time communication with the Central Communications System is lost.

## **1.14 Printed Circuit Boards (PCB)**

### **1.14.1 PCB Identification Requirements.** Requirements for PCB identification:

- a) Each PCB shall be identifiable by some sort of identification and revision level. Where feasible, this identification should be readily viewed without removal of the PCB from the Video Gaming Terminal
- b) The top assembly revision level of the PCB shall be identifiable (if track cuts and/or patch wires are added to the PCB, then a new revision number or level shall be assigned to the assembly);
- c) Manufacturers shall ensure that circuit board assemblies, used in their Video Gaming Terminals, conform functionally to the documentation and the certified versions of those PCBs that were evaluated and certified by the Independent Test Laboratory; and
- d) The manufacturer's name or logo must be present and shall be clearly discernible.

## **1.15 Patch Wires**

**1.15.1 Documentation of Patch Wires & Track Cuts.** All patch wires and track cuts shall be documented, in an appropriate manner, in the relevant service manual and/or service bulletin and shall be submitted to the Independent Test Laboratory. This does not prohibit required repairs in the field.

## **1.16 Switches and Jumpers**

**1.16.1 General Statement.** The VGT shall not contain any switches or jumpers that alter the paytables or payout percentages in its operation. Switches or jumpers may be installed to control graphic routines, speed of play, and sound. The Illinois Gaming Board does not accept any switches or jumpers residing in the Video Gaming Terminal that alter paytables or other game-critical information. This includes switches or jumpers even when they are securely located in a locked logic compartment.

## **1.17 Video Monitor/Touch Screens**

**1.17.1 General Statement.** All video monitor / touch screens shall meet the following requirements:

- a) Touch screens shall be accurate and, once calibrated, shall maintain that accuracy for at least the manufacturer's recommended maintenance period;
- b) A touch screen shall be able to be re-calibrated by an authorized person (e.g., licensed technician / handler) without access to the Video Gaming Terminal cabinet other than opening the main door; and
- c) There shall be no hidden or undocumented buttons/touch points (if applicable) anywhere on the touch screen, that affect game play and/or that impact the outcome of the game, except as provided for by the game rules.

## **1.18 Bill Acceptors and Other Methods of Inserting Monetary Values into the Video Gaming Terminal**

**1.18.1 Bill Acceptors.** A VGT shall have one or more mechanisms that accept cash, in the form of bills or payout tickets. All currency acceptance devices shall be able to detect the entry of valid bills and payout tickets and provide a method to enable the Video Gaming Terminal software to interpret and act appropriately upon a valid or invalid input. The currency acceptance device(s) shall be electronically-based and be configured to ensure that they only accept valid bills of legal tender or payout tickets that have been validated by the CCS and must reject all others in a highly accurate manner. The currency acceptance system shall be constructed and programmed in a manner that protects against vandalism, abuse,

or fraudulent activity. In addition, currency acceptance device(s) shall meet the following requirements for all acceptable types of medium:

- a) Each valid bill or ticket shall register the actual monetary value or the appropriate number of credits received for the denomination being used on the player's credit meter.
- b) Credit Meter Update upon Bill or Ticket Insertion. Credits shall only be registered when:
  - i. The bill or ticket has passed the point where it is accepted and stacked;
  - ii. The validity of the ticket has been verified by the CCS; and
  - iii. The currency acceptor has sent the "irrevocably stacked" message to the VGT.
- c) Bill Acceptor Security Features. Each Bill Acceptor shall be designed to prevent the use of cheating methods such as stringing, slamming, drilling, the insertion of foreign objects and any other manipulation that may be deemed as a cheating technique. If such attempts at physical tampering are made, the VGT shall suspend itself from operating until reset. A method for detection of counterfeit bills must be implemented.
- d) Credit Acceptance Conditions. Acceptance of any bills or tickets for crediting to the credit meter shall only be possible when the Video Gaming Terminal is enabled for play. Other states, such as error conditions, including door opens, audit mode and game play, shall cause the disabling of the currency acceptance system.
- e) Bill Acceptor Error Conditions. Each Video Gaming Terminal and/or bill acceptor shall have the capability of detecting and displaying (for bill acceptors, it is acceptable to disable or flash light(s)) the following bill acceptor error conditions:
  - i. Stacker full;
  - ii. Bill jams;
  - iii. Bill acceptor door open - where a Bill Acceptor door is the belly glass door, a door open signal is sufficient;
  - iv. Stacker door open;
  - v. Stacker removed; and
  - vi. Bill acceptor malfunction not specified above.

**1.18.2 Communication.** All bill acceptors shall communicate to the Video Gaming Terminal using a bi-directional communication protocol.

**1.18.3 Factory Set Bill Acceptors.** If bill acceptors are designed to be factory set only, it shall not be possible to access or conduct maintenance or adjustments to those Bill Acceptors in the field, other than:

- a) The selection of desired acceptance for bills and their limits;
- b) Changing of certified control program media or downloading of certified software;
- c) Adjustment of the tolerance level for accepting bills of varying quality should not be allowed externally to the Video Gaming Terminal. Adjustments of the tolerance level should only be allowed with adequate levels of security in place (e.g., secure access to possible bill acceptor adjustments and/or settings). This can be accomplished through lock and key, physical switch settings, or other accepted methods approved on a case-by-case basis;
- d) Maintenance, adjustment, and repair per approved factory procedures; or
- e) Options that set the direction or orientation of acceptance.

## **1.19 Video Gaming Terminal Metering of Bill Acceptor Events**

**1.19.1 General Statement.** A Video Gaming Terminal shall maintain sufficient electronic metering to be able to report the following:

- a) Total monetary value of all items accepted;
- b) Total number of all items accepted; and
- c) A breakdown of the bills accepted. The game shall log the number of bills accepted for each bill denomination.

**1.19.2 Bill Acceptor Recall.** A Video Gaming Terminal shall retain in its memory and make available for display the information required in 1.19.1 of the last five (5) items accepted by the bill acceptor.

## **1.20 Acceptable Bill Acceptor Locations**

**1.20.1 Bill Acceptor Location.** The Bill Acceptor shall be located in a locked area of the Video Gaming Terminal (e.g., require opening of the main door to access), but not in the logic area. Only the bill insertion area will be accessible by the player.

## **1.21 Bill Acceptor Stacker Requirements**

**General Statement.** Each bill acceptor shall have a secure stacker and all accepted bills and tickets shall be deposited into the secure stacker. The secure stacker is to be attached to the Video Gaming Terminal in such a manner so that it cannot be easily removed by physical force and shall meet the following requirements:



- a) The Bill Acceptor device shall have a 'stacker full' sensor; an explicit "stacker full" error message shall not be utilized by the VGT since it may pose a security risk;
- b) Access to the currency storage area is to be secured via separate key locks and shall be fitted with sensors that indicate door open/close or stacker removed.
- c) There shall be a separate keyed lock to access the stacker area. This keyed lock shall be separate from the main door. In addition, a separate keyed lock shall be required to remove the bills from the stacker (e.g. 2 levels of locks, plus the main door are 3 levels of locks).

## **1.22 Credit Redemption**

**1.22.1 Credit Redemption.** Available credits may be collected from the Video Gaming Terminal by the player pressing the “Collect”, “Cash Out” or equivalently designed button at any time other than during:

- a) A game being played;
- b) Audit mode;
- c) Any door open;
- d) Test mode;
- e) A Credit Meter or Win Meter increment, unless the entire amount is placed on the meters when the collect button is pressed; or
- f) An error condition provided the error condition prevents a valid cashout which is not supported through some other means.

## **1.23 Printers**

**1.23.1 Payment By Ticket Printers.** The Video Gaming Terminal must pay the player by issuing a printed payout ticket redeemable for payment as provided by the Video Gaming Act and other applicable rules defined within the Act. However, in the inordinate cases where a manual “facility pay” is required, for example, due to a printer error or temporary unavailability of the ticket validation system, proper local internal controls are needed to handle cash payment to the player. Under normal operating conditions, the printer shall print on a payout ticket and the VGT shall provide data to the Central Communications System which contains the following information regarding each payout ticket printed.

- a) Value of credits in local monetary units in numerical form;
- b) Time of day the payout ticket was printed in twenty-four (24) hour format showing hours and minutes;
- c) Date, in any recognized format, indicating the day, month, and year;
- d) Video Gaming Terminal number;
- e) Unique validation number;
- f) Barcode (not required to be sent to the CCS);
- g) Indication of an expiration period from date of issue, or date and time the payout ticket will expire (24hr format which is understood by the local date/time format), of no less than one year from the date of issue as determined by the Illinois Gaming Board; and

- h) Site identification. This information may be printed by the ticket printer or may be included on the ticket stock (not required to be sent to the CCS).

**1.23.2 Printer Location.** A Video Gaming Terminal shall be equipped with a printer, and it shall be located in a locked area of the terminal (e.g., require opening of the main door to access), but not in the logic area or the drop box. This requirement ensures that changing the paper does not require access to the secure areas of the terminal.

**1.23.3 Printer Error Conditions.** A printer shall have mechanisms to allow software to interpret and act upon the following conditions:

- a) Out of paper –This error condition must be detected upon issuance of the final payout ticket on a particular Video Gaming Terminal and the Video Gaming Terminal must immediately disable so that the condition can be resolved.
- b) Paper low; - it is permissible for the Video Gaming Terminal to **not** disable for this condition; however, there should be a means for the licensed technician / handler to be alerted;
- c) Printer jam/failure; When this error condition is detected the software must immediately disable so that the condition can be resolved; and
- d) Printer disconnected – When this error condition is detected the software must immediately disable so that the condition can be resolved.

## **1.24 Payout Ticket Issuance & Redemption**

A VGT shall directly dispense payout tickets only. A VGT shall not directly dispense coins, cash, tokens, or any other article of exchange or value except for tickets.

**1.24.1 Payout Ticket Issuance.** A payout ticket can be generated at a VGT through an internal document printer, at a player's request, by redeeming all credits.

**1.24.2 Payout Ticket Issuance Log.** The VGT shall have the ability to retain information for the last twenty-five (25) payout tickets issued.

**1.24.3 Payout Ticket Redemption.** Payout tickets may only be redeemed by the following methods:

- a) An approved secure validation device, cash disbursement device, or system as certified by the Independent Test Laboratory and approved by the Illinois Gaming Board.
- b) Payout tickets may be accepted by a VGT when the redemption occurs within the same site as the payout ticket is issued.

**1.24.4 Payout Ticket Redemption Log.** The VGT shall have the ability to retain information for the last twenty-five (25) payout tickets redeemed.

# CHAPTER 2

## 2.0 Software Requirements

### 2.1 Introduction

**2.1.1 General Statement.** This section shall set forth the technical requirements for the Rules of Play of the game.

### 2.2 Rules of Play

**2.2.1 Credits and Maximum Wagers.** *The cost of one (1) playable credit on a VGT shall be 1 cent, 5 cents, 10 cents, or 25 cents, and the **maximum wager played per game shall not exceed \$4.** The \$4 dollar maximum bet limit must be ensured at all times and may not be bypassed by any extended features such as double up, double down, splits, extra credits wagered during bonus, etc. The VGT's credit meter must be maintained in dollars and cents and the VGT must not allow a bet of less than one cent.*

**2.2.2 Maximum Award.** *No cash award for the maximum wager on any individual game shall exceed **\$1,199.** A game shall not allow wins in excess of \$1,199 that are then truncated to \$1,199 nor can game play simply cease or exit gracefully when the win limit is reached. Otherwise, this could be confusing to the player since wins are being advertised and/or played out as if they can be won when in fact the total win is restricted to \$1,199. The IGB clearly defines game cycle as being "wager to wager", and this is unique in the context of a \$1,199 cap, but is intentional. There cannot be any such capping, truncation or cessation features with respect to the max win. The game will have to be specifically designed so as not to pay any total wins per game cycle in excess of \$1,199.00, or alternatively, additional wagering can be established so as to create a new game cycle. The additional wager must result in a separate and additional Random Number Generator call and must be clearly advertised to the player.*

#### 2.2.3 Display.

- a) Payglass/Video Display. Payglasses or video displays shall be clearly identified and shall accurately state the rules of the game and the award that will be paid to the player when the player obtains a specific win. The payglasses or video displays shall clearly indicate whether awards are designated in credits or currency.. The Video Gaming Terminal shall reflect any

change in award value which may occur in the course of play. This may be accomplished with a digital display in a conspicuous location of the Video Gaming Terminal. All payable information shall be accessible to a player prior to committing to a bet. Payglances or video displays shall not be certified if the information is inaccurate, confusing, or misleading.

- b) Upcoming wins. The game shall not advertise 'upcoming wins', (for example, three (3) times pay coming soon). Notwithstanding the foregoing, a game may display such advertising if: i) it is mathematically demonstrable that an award occurrence is upcoming, and ii) if the player is shown a graphical representation in the form of a progress indicator it must accurately depict the current progress towards such an award.
- c) Bonus Feature Information. Each game which offers a feature such as Free Games or a Fever Mode must display the number of feature games that are remaining, during each game.
- d) Multiple Decks of Cards. Any games which utilize multiple decks of cards should alert the player as to the number of card decks in play.

**2.2.4 Information to be Displayed**. A Video Gaming Terminal shall clearly display, or shall have displayed on the video monitor / touch screen, the following information to the player at all times the Video Gaming Terminal is available for player input:

- a) The player's current credit balance;
- b) The current bet amount;
- c) All possible winning outcomes, or be available as a menu item or on the help menu;
- d) Win amounts for each possible winning outcome, or be available as a menu or help screen item;
- e) The amount won for the last completed game (until the next game starts, betting options are modified or if a new selection is chosen from the game menu);
- f) The player options selected (e.g., bet amount, lines played) for the last completed game (until the next game starts, betting options are modified or if a new selection is chosen from the game menu);The denomination being played; and
- g) A disclaimer regarding Malfunctions Void all Pays.

### **2.2.5 Multi-Line Games.**

- a) Each individual line to be played shall be clearly indicated by the Video Gaming Terminal so that it is clear to a reasonable player as to which lines are being bet on and the credits bet per line;
- b) The credits bet per line shall be clearly indicated to the player either by an explicit value or by providing sufficient information so that a player may easily derive the value by using the number of lines bet in conjunction with the total bet; and
- c) The winning playline(s) shall be clearly discernible to the player (e.g., on a video game it may be accomplished by drawing a line over the symbols on the playline(s) and/or the flashing of winning symbols and line selection box). Where there are wins on multiple lines, each winning playline may be indicated in turn.

**2.2.6 Game Cycle.** A game is considered complete when the final transfer to the player's credit meter takes place (in case of a win), or when all credits wagered are lost. A game cycle is presently defined to be wager to wager only. The following are all considered to be part of a single game:

- a) Games that trigger a free game feature and any subsequent free games;
- b) "Second screen" bonus feature(s);
- c) Games with player choice (e.g., Draw Poker or Blackjack);
- d) Games where the rules permit wagering of additional credits (e.g., Blackjack insurance) and
- e) Double-up/Gamble features.

## **2.3 Random Number Generator (RNG) Requirements**

A Random Number Generator (RNG) is an algorithm implemented in software that generates numerical values that are not predictable.

### **2.3.1 Game Selection Process.**

- a) All Combinations and Outcomes Shall Be Available. Each possible permutation or combination of game elements that produces winning or losing game outcomes shall be available for random selection at the initiation of each play, unless otherwise denoted by the

- game; the game must display an accurate representation of the outcome (as determined by the RNG);
- b) No Near Miss. After selection of the game outcome, the Video Gaming Terminal shall not make a variable secondary decision, which affects the result shown to the player. For instance, the Random Number Generator chooses an outcome that the game will be a loser, the game shall not substitute a particular type of loser to show to the player. This would eliminate the possibility of simulating a 'Near Miss' scenario where the odds of the top award symbol landing on the payline are limited but frequently appear above or below the payline;
  - c) No Corruption from Associated Equipment. A Video Gaming Terminal shall use appropriate communication protocols to protect the RNG and random selection process from influence by associated equipment, which may be communicating with the Video Gaming Terminal.

**2.3.2 Random Number Generator Requirements**. The use of an RNG results in the selection of game symbols or production of game outcomes. The selection shall:

- a) Be statistically independent;
- b) Conform to the desired random distribution;
- c) Pass various recognized statistical tests;
- d) Be unpredictable; and
- e) Be used to determine the outcome of each play of the game. The random selection process must meet 99% confidence limits using a standard chi-squared test for (randomness) goodness of fit.

**2.3.3 Applied Tests**. The Independent Test Laboratory may employ the use of various recognized tests to determine whether or not the random values produced by the Random Number Generator pass the desired confidence level of 99%. These tests may include, but are not limited to:

- a) Chi-square test;
- b) Equi-distribution (frequency) test;
- c) Gap test;
- d) Overlaps test;
- e) Poker test;
- f) Coupon collector's test;
- g) Permutation test;



- h) Kolmogorov-Smirnov test;
- i) Adjacency criterion tests;
- j) Order statistic test;
- k) Runs tests (patterns of occurrences should not be recurrent);
- l) Interplay correlation test;
- m) Serial correlation test potency and degree of serial correlation (outcomes should be independent of the previous game);
- n) Tests on subsequences; and
- o) Poisson distribution.

**2.3.4 Background RNG Activity Requirement.** The RNG shall be cycled continuously in the background between games and during game play at a speed that cannot be timed by the player. The Illinois Gaming Board recognizes that some time during the game, the RNG may not be cycled when interrupts may be suspended. The IGB recognizes this, but the exception shall be kept to a minimum.

**2.3.5 RNG Seeding.** The first seed shall be randomly determined by an uncontrolled event. After every game there shall be a random change in the RNG process (new seed, random timer, delay, etc.). This will verify the RNG doesn't start at the same value every time. It is permissible not to use a random seed; however, the manufacturer must ensure that games will not synchronize.

**2.3.6 Live Game Correlation.** Unless otherwise denoted on the payglass / video display, where the Video Gaming Terminal plays a game that is a simulation of a live casino game such as Poker, Blackjack, etc., the same probabilities associated with the live game shall be evident in the simulated game. For example, the odds of drawing a specific card or cards in Poker shall be the same as in the live game.

**2.3.7 Symbol Probability.** For game types (such as video spinning reel games) with the exclusion of free game bonuses, unless otherwise denoted on the video display / touch screen, the mathematical probability of a symbol appearing in a position for any game outcome shall be constant.

**2.3.8 Card Games.** The requirements for games depicting cards being drawn from a deck are the following:

- a) Cards once removed from the deck shall not be returned to the deck except as provided by the rules of the game depicted; and

- b) As cards are removed from the deck they shall be immediately used as directed by the rules of the game (i.e., the cards are not to be discarded due to adaptive behavior by the Video Gaming Terminal).

**2.3.9 Ball-Drawing Games.** Note that ball-drawing games are not expressly permitted by the Illinois Video Gaming Act, but may be approved with prior approval by the IGB. Assuming such approval is given, the following requirements are intended to apply to such games:

- a) At the start of each game, only balls applicable to the game are to be depicted. For games with bonus features and additional balls that are selected, they should be chosen from the original selection without duplicating an already chosen ball;
- b) The pool shall not be re-mixed except as provided by the rules of the game depicted; and
- c) As balls are drawn from the pool, they shall be immediately used as directed by the rules of the game (i.e., the balls are not to be discarded due to adaptive behavior by the Video Gaming Terminal).

**2.3.10 Scaling Algorithms.**

- a) If a random number with a range shorter than that provided by the RNG is required for some purpose within the Video Gaming Terminal, the method of re-scaling, (i.e., converting the number to the lower range), is to be designed in such a way that all numbers within the lower range are equally probable.
- b) If a particular random number selected is outside the range of equal distribution of re-scaling values, it is permissible to discard that random number and select the next in sequence for the purpose of re-scaling.

## **2.4 Payout Percentages, Odds and Non-Cash Awards**

**2.4.1 Software Requirements for Percentage Payout.** Each game shall theoretically payout a minimum of eighty percent (80%) during the expected lifetime of the base game. The Illinois Gaming Board has also established a maximum payout percentage of one-hundred percent (100%). The base game return percentage may be considered in combination with a mandatory progressive and/or bonusing feature, such that the sum total of the return for both the base game and any required progressive/bonusing feature satisfies the 80% minimum, and subject to the following requirements:

- a) Optimum Play Used for Skill Games. Video Gaming Terminals that may be affected by player skill shall meet the requirement of Section 2.4.1 when using a method of play that will provide the greatest return to the player over a period of continuous play.
- b) Minimum Percentage Requirement Met at All Times. The minimum percentage requirement of 80% shall be met at all times. The minimum percentage requirement shall be met when playing at the lowest end of a non-linear payable (i.e., if a game is continuously played at a minimum bet level for its total game cycle and the theoretical RTP is lower than the minimum percentage, then the game is not permissible).
- c) Double-up or Gamble. The Double-up or Gamble options shall have a theoretical return to the player of one hundred percent (100%). Furthermore, the Double up feature must not allow the maximum wager limit (\$4.00) to be breached.
- d) The game must not automatically alter paytables or any function of the VGT based on internal computation of hold percentage or have any means of manipulation that affects the random selection process or probabilities of winning a game.
- e) The theoretical payback percentage of a VGT shall not be capable of being changed without making a hardware or software change in the VGT, either on site or via the Central Communications System.

**2.4.2 Odds of Winning**. The odds of winning must be displayed on-screen to the player.

- a) For line up games, the game must calculate the odds of winning anything with all lines wagered and display that odds value to the player on-screen. The display is ONLY required for wagered spins.
- b) For poker themes, the game must indicate the odds adjacent to each winning hand displayed in the payable, assuming a wager of one credit and using an optimal or near optimal strategy.)

**2.4.3 Multiple Percentages**. For games that offer multiple percentages, please refer to the 'Configuration Setting' requirements in section 1.10.7 of this document.

## **2.5 Bonus Games**

**2.5.1 Bonus Games**. Games that have awards calculated, occurring from game play within the base game's cycle (e.g. bonus features, including free games), shall meet the following:

- a) The game shall display clearly to the player which game rules apply to the current game state;
- b) The game shall clearly display to the player possible win amount ranges, multiplier ranges, etc. that can be obtained from bonus play;
- c) The game, other than those that occur randomly, shall display to the player sufficient information to indicate the current status towards the triggering of the next bonus game;
- d) If the game requires obtaining several events/symbols toward a feature, the number of events/symbols needed to trigger the bonus shall be indicated along with the number of events/symbols collected at any point;
- e) The game shall not adjust the likelihood of a bonus occurring based on the history of prizes obtained in previous games (i.e., games shall not adapt their theoretical return to player based on past payouts);
- f) If a game's bonus is triggered after accruing a certain number of events/symbols or combination of events/symbols of a different kind, the probability of obtaining like events/symbols shall not deteriorate as the game progresses (e.g., for identical events/symbols it is not permitted that the last few events/symbols needed are more difficult to obtain than the previous events/symbols of that kind);
- g) The game shall make it clear to the player that he or she is in a bonus mode to avoid the possibility of the player walking away from the Video Gaming Terminal not knowing the game is in a bonus mode;
- h) Bonus game awards are part of the game cycle with predetermined award values. Bonus play award contributions to the program payout percentage are calculated consistent with awards of the regular game cycle. Specifically, if the cycle for bonus play awards is different from the base game cycle, then the bonus play awards, occurring within the base game's cycle, will be calculated as part of the game's payout; and
- i) Pursuant to the rules, the game shall display the rules of play for the bonus game awards, the rewards associated with each bonus play award, and the character combinations that will result in the specific payouts. For bonus play awards achieved by obtaining specific game results, the progress of the award shall be displayed.

## **2.6 Extra Credits Wagered during Bonus Games**

**2.6.1 General Statement.** If a bonus or feature game requires extra credits to be wagered during the bonus and the game accumulates all winnings (from the trigger and the feature) to a temporary “win” meter (rather than directly to the credit meter), the game shall:

- a) Provide a means where winnings on the temporary meter can be bet (via the credit meter) to allow for instances where the player has an insufficient credit meter balance to complete the feature;
- b) Transfer all credits on the temporary meter to the credit meter upon completion of the feature;
- c) Not exceed the max bet limit of \$4; and
- d) Provide the player an opportunity NOT to participate.

## **2.7 Mystery Awards**

**2.7.1 General Statement.** It is acceptable for games to offer a ‘Mystery Award’ (an award that is not specifically called out on the payglass or game screen); however, the game must indicate the maximum amount the player could potentially win. If the minimum amount that could potentially be awarded is not displayed, it will be assumed to be ‘0’. In addition, both a minimum and maximum amount must be displayed for any Mystery Award if the method to receive the award involves strategy or skill. This would include methods where the value of the payable is used in order to make decisions that could increase the return to the player (i.e. Video Poker).

**Note:** *The VGT shall clearly indicate on the payglass or video screen when a Mystery Award applies.*

## **2.8 Multiple Games on the Video Gaming Terminal**

**2.8.1 Selection of Game for Display.**

- a) The methodology employed by a player to select and discard a particular game for play on a multi-game Video Gaming Terminal shall be clearly explained to the player on the Video Gaming Terminal;
- b) The Video Gaming Terminal shall be able to clearly inform the player of all games, their rules and/or the paytables before the player must commit to playing them;

- c) The player shall at all times be made aware of which game has been selected for play and is being played, as applicable;
- d) When multiple games are offered for play, the player shall not be forced to play a game by just selecting a game title, unless the game screen clearly indicates the game selection is unchangeable. If not disclosed, the player shall be able to return to the main menu;
- e) It should not be possible to select or start a new game before the current play is completed and all relevant electronic meters have been updated (including features, gamble and other options of the game) unless the action to start a new game terminates the current play in an orderly manner;
- f) The set of games, or the payable(s) offered to the player for selection can be changed only by a secure certified method which includes disabling games, (e.g., turning on and off games available for play through an approved administrative interface.) The requirements outlined in 'Configuration Setting' of this document shall govern the non-volatile memory clear control requirements for these types of selections. However, games that keep the previous payable's data in memory, a non-volatile memory clear is not required; and
- g) No changes to the set of games offered to the player for selection (or to the payable) are permitted while there are credits on the player's credit meter or while a game is in progress.

## **2.9 Electronic Metering within the Video Gaming Terminal**

**2.9.1 Credit Meter Units and Display.** The credit meter shall be maintained in cash value (i.e. US currency) and shall at all times indicate all cash available for the player to wager or cashout with the exception of when the player is viewing an informational screen such as a menu or help screen item. This should be displayed to the player unless a tilt condition or malfunction exists.

**2.9.2 Reserved for Future Use.**

**2.9.3 Credit Meter – Incrementing.** The value of every prize (at end of a game) shall be added to the player's credit meter. The credit meter shall also increment with the value of all valid bills and payout tickets accepted.

**2.9.4 Progressives.** Progressive awards may be added to the credit meter if:

- a) The credit meter is maintained in US currency format; or
- b) The progressive meter is incremented to whole credit amounts; or

- c) The progressive prize in US currency amount format is converted properly to credits upon transfer to the player's credit meter in a manner that does not mislead the player (i.e., make unqualified statement "wins meter amount" and then rounds down on conversion or cause accounting imbalances).

**Note:** *The Illinois Video Gaming Act allows for standalone and local area progressive types. Wide area progressives are not envisioned for initial deployment.*

**Note:** *Progressive Awards shall not allow a VGT to exceed the \$1,199 max award per game cycle. A game shall not allow wins in excess of \$1,199 that are then truncated to \$1,199 nor can game play simply cease or exit gracefully when the win limit is reached. Otherwise, this could be confusing to the player since wins are being advertised and/or played out as if they can be won when in fact the total win is restricted to \$1,199. The IGB clearly defines game cycle as being "wager to wager", and this is unique in the context of a \$1,199 cap, but is intentional. There cannot be any such capping, truncation or cessation features with respect to the max win. The game will have to be specifically designed so as not to pay any total wins per game cycle in excess of \$1,199.00, or alternatively, additional wagering can be established so as to create a new game cycle. The additional wager must result in a separate and additional Random Number Generator call and must be clearly advertised to the player.*

**2.9.5 Collect Meter.** There shall be the facility for a collect meter or some equivalent game display or message, which will show the number of credits or cash collected by the player upon a cashout. This should be displayed to the player unless a tilt condition or malfunction exists (the number of credits or cash collected shall be subtracted from the player's credit meter and added to the collect meter).

**2.9.6 Software Meter Information Access.** The software meter information shall only be accessible by a licensed technician / handler and must have the ability to be displayed on demand using a secure means.

**2.9.7 Non-Resettable Electromechanical Accounting Meters.** Video Gaming Terminals must utilize non-resettable electromechanical meters housed in a locked area of the terminal which keep a permanent record of the following:

- a) All cash inserted into the Video Gaming Terminal; (This meter must reflect all amounts physically accepted by the terminal .)

- b) All winnings paid by the VGT's printer; (This meter must reflect all amounts physically paid out by the terminal regardless of source. Except where inordinate circumstances require a hand pay, everything must be paid to the player via a payout ticket)
- c) Credits played in for the Video Gaming Terminals; and
- d) Credits won by video gaming players.

**2.9.8** Video Gaming Terminals must be designed so that replacement of parts or modules required for normal maintenance does not necessitate replacement of the electromechanical meters.

**2.9.9 *Electronic Accounting and Occurrence Meters.*** Electronic accounting meters shall be at least ten (10) digits in length. These meters shall be maintained in U.S. dollars and cents. Eight (8) digits must be used for the dollar amount and two (2) digits used for the cent amount.. The meter must roll over to zero any time the meter exceeds ten (10) digits and after 9,999,999,999 has been reached or any other value that is logical. Occurrence meters shall be at least eight (8) digits in length; however, they are not required to automatically roll over. Meters shall be labeled so they can be clearly understood in accordance with their function. All Video Gaming Terminals shall be equipped with a device, mechanism or method for retaining the value of all meter information specified in this section (2.9.9) which must be preserved for a minimum of 180 days in the event of power loss to the Video Gaming Terminal. The required electronic meters are as follows (accounting meters are designated with an asterisk '\*'):

- a) Coin In\*. The Video Gaming Terminal must have a meter that accumulates the total value of all wagers, whether the wagered amount results from the insertion of currency, deduction from a credit meter or any other means. This meter shall not include subsequent wagers of intermediate winnings accumulated during game play sequence such as those acquired from "double up" games;
- b) Coin Out\*. The Video Gaming Terminal must have a meter that accumulates the total value of all amounts directly paid by the Video Gaming Terminal as a result of winning wagers. This meter will not record amounts awarded from of a progressive payout;
- c) Bill In\*. The Video Gaming Terminal must have a meter that accumulates the total value of currency accepted. Additionally, the Video Gaming Terminal must have a specific meter for each denomination of currency accepted that records the number of bills accepted of each denomination;



- d) Payout Ticket Out\*. The Video Gaming Terminal must have a meter that accumulates the total value of all payout tickets issued by the Video Gaming Terminal (A.K.A. Ticket-Out);
- e) Payout Ticket In\*. The Video Gaming Terminal must have a meter that accumulates the total value of all payout tickets redeemed by the Video Gaming Terminal (A.K.A. Ticket-In);
- f) Video Gaming Terminal Paid Progressive Payout\*. The Video Gaming Terminal must have a meter that accumulates the total value of credits paid as a result of progressive awards paid by the Video Gaming Terminal.
- g) Games-played. The Video Gaming Terminal must have meters that accumulate the number of games played:
  - i. Since power reset;
  - ii. Since door close; and
  - iii. Since game initialization (non-volatile memory clear).
- h) Bill Acceptor door. (i.e. stacker door) The Video Gaming Terminal must have a meter that accumulates the number of times the Bill Acceptor door has been opened since the last non-volatile memory Clear;
- i) Progressive Occurrence. The Video Gaming Terminal must have a meter that accumulates the number of times each progressive meter is activated (if applicable). This rule shall require that the controller, whether that is the Video Gaming Terminal itself, or an external progressive controller, when configured for progressive functionality, shall provide for this occurrence meter for each progressive level offered; and
- j) Handpay\*. The machine must have a meter that accumulates the total value of credits paid by a location resulting from an amount of which is not capable of being paid by the machine itself. For example, in the event of a printer malfunction where a valid receipt ticket cannot be printed and winnings must be manually processed.

**2.9.10 Multi-Game Specific Meters**. In addition to the one set of master Electronic Accounting Meters required above, each individual game available for play shall have the period meters “Credits Bet” and “Credits Won” in either credits or dollars. Even if a double up or gamble game is lost, the initial win amount/credits bet amount shall be recorded in the game-specific meters. Alternatively, there can be separate meters that account for the double-up or gamble information. See also, Section 2.9.11. Regardless, the method of metering must be understood on the screen.

**2.9.11 Double Up or Gamble Meters**. For each type of Double-up or Gamble feature offered, there shall be sufficient meters to determine the feature’s actual return percentage, which should increment

accurately every time a Double-up or Gamble play concludes. The Video Gaming Terminal must supply accounting for the double-up or gamble information. It is not acceptable for the feature to simply be disabled if the accounting is not supported.

## **2.10 Reserved for Future Use.**

## **2.11 Communication Protocol**

**2.11.1** Video Gaming Terminals shall be linked by the Central Communications System. The Central Communications System shall use a standard industry protocol, as defined by the Gaming Standards Association, and shall have the functionality to enable the Illinois Gaming Board or its designee to activate or deactivate individual Video Gaming Terminals from the Central Communications System.

**2.11.2** If a deactivation request is received by the Video Gaming Terminal software from the Central Communications System during a bonus sequence involving purchased feature games (e.g. fever mode), the Video Gaming Terminal software must allow for the completion of the current game and provide for the ability to redeem any remaining credits owed to the player. Any/all remaining purchased feature games shall be available upon reactivation of the Video Gaming Terminal software.

**2.11.3** For all other bonus game sequences which do not require additional wagers to be made by the player, the Video Gaming Terminal software shall provide the ability for all bonus game sequences to complete and then provide the ability to redeem any remaining credits owed to the player.

**2.11.4** The Gaming Board, in its discretion, may require Video Gaming Terminals to display “Amber Alert” messages if the Gaming Board makes a finding that it would be economically and technically feasible and pose no risk to the integrity and security of the Central Communications System and Video Gaming Terminals.

## **2.12 Error Conditions**

**2.12.1 General Statement.** Error conditions shall cause the Video Gaming Terminal to lock up and require intervention by a licensed technician / handler, or other authorized individual, except as noted within this section. Error conditions shall be cleared either by a licensed technician / handler or other authorized individual or upon initiation of a new play sequence after the error has cleared. Error conditions shall be communicated to the Central Communications System. Video Gaming Terminals shall

be capable of detecting and displaying the following error conditions and illuminate the tower light for each or sound an audible alarm:

- a) Door Open Error Conditions
  - i. All external doors (i.e. Main, Belly, Top Box);
  - ii. Drop box door;
  - iii. Logic area door;
  - iv. Bill Acceptor door (i.e. Stacker door); and
  - v. Any other currency storage area that has a door.
- b) Other Error Conditions
  - i. Non-volatile memory error;
  - ii. Low non-volatile memory battery, for batteries external to the non-volatile memory itself or low power source; and
  - iii. Program error or authentication mismatch; and
  - iv. Power resets.

## **2.13 Program Interruption & Resumption**

**2.13.1 Interruption.** After a program interruption (e.g., processor reset), the software shall be able to recover to the state it was in immediately prior to the interruption occurring. If a power failure occurs during acceptance of a bill, the Bill Acceptor shall give proper credits or return the note, notwithstanding that there may be a small window of time where power may fail and credit may not be given. In this case, the window shall be less than one (1) second.

**2.13.2. Restoring Power.** If a Video Gaming Terminal is powered down while in an error condition, then upon restoring power, the specific error message shall still be displayed and the Video Gaming Terminal shall remain locked-up. This is unless power down is used as part of the error reset procedure, or if on power up or door closure, the Video Gaming Terminal checks for the error condition and detects that the error is no longer in existence.

**2.13.3 Simultaneous Inputs.** The program shall not be adversely affected by the simultaneous or sequential activation of the various inputs and outputs, such as 'play buttons', which might, whether intentionally or not, cause malfunctions or invalid results.

**2.13.4 Resumption.** On program resumption, the following procedures shall be performed as a minimum requirement:

- a) Any communications to an external device shall not begin until the program resumption routine, including self-tests, is completed successfully; and
- b) The Bill Acceptor device shall perform a self-test at each power up. In the event of a self-test failure, the Bill Acceptor shall automatically disable itself (i.e., enter bill reject state) until the error state has been cleared.

## **2.14 Door Open/Close**

**2.14.1 Required Door Metering.** The VGT software shall be able to detect access to the following doors or secure areas:

- a) All external doors (i.e. Main, Belly, Top Box);
- b) Drop box door;
- c) Bill Acceptor door (i.e. stacker door); and
- d) Logic door.

**2.14.2 Door Open Procedures.** When any one of the Video Gaming Terminal's external doors are opened, the game shall cease play, enter an error condition, display an appropriate error message, disable bill acceptance, and either sound an alarm or illuminate the tower light or both.

**2.14.3 Door Close Procedures.** When all of the Video Gaming Terminal's external doors are closed, the game shall return to its original state and display an appropriate error message, until the initiation of the next game.

## **2.15 Test/Diagnostic Mode (Demo Mode)**

**2.15.1 General Statement.** If the Video Gaming Terminal is in a test, diagnostic or demo mode, any test that incorporates credits used for diagnostics shall be completed on resumption of normal operation. In addition, there shall not be any mode other than normal operation (ready for play) that increments any of the electronic meters. Any credits on the Video Gaming Terminal that were accrued during the test, diagnostic, or demo mode shall be automatically cleared before the mode is exited. Specific meters are permissible for these types of modes provided the meters indicate such.

**2.15.2 Entry to Test/Diagnostic Mode.** When opened, the main cabinet door of the Video Gaming Terminal may automatically place the Video Gaming Terminal in a service or test/diagnostic mode. Test/diagnostic mode may also be entered, via an appropriate instruction, from a licensed technician / handler or other authorized individual during an audit mode access. These modes should not be accessible to the player.

**2.15.3 Exiting From Test/Diagnostic Mode.** When exiting from test/diagnostic mode, the VGT shall return to the original state it was in when the test mode was entered.

**2.15.4 Test Games.** If the Video Gaming Terminal is in a game test mode, the VGT shall clearly indicate that it is in a test mode, not normal play.

## **2.16 Game History Recall**

**2.16.1 Number Of Last Plays Required.** Information on at least the last ten (10) games is to be always retrievable on the operation of a suitable external key-switch, or another secure method that is not available to the player.

**2.16.2 Last Play Information Required.** Last play information shall provide all information required to fully reconstruct the last ten (10) plays. All values shall be displayed; including the initial credits, credits bet, credits won and credits cashed out, all intermediate play steps, payline symbol combinations and credits paid whether the outcome resulted in a win or loss. This information can be represented in graphical or text format. If a progressive was awarded, it is sufficient to indicate the progressive was awarded and not display the value. This information should include the final game outcome, including all player choices, bonus features and the results of double-up or gamble feature (if applicable).

**2.16.3 Bonus Rounds.** The ten (10) game recall shall reflect bonus rounds in their entirety. If a bonus round lasts 'x number of events,' each with separate outcomes, each of the 'x events' shall be displayed with its corresponding outcome, regardless if the result is a win or loss. The recall shall also reflect position dependent events if the outcome results in an award. Video Gaming Terminals offering games with a variable number of free games, per base game, may satisfy this requirement by providing the capability to display the last 50 free games in addition to each base game.

# Revision History

February 28, 2010 – Newly-created document V1.0 based on IL regulations.

August 23, 2010 – Revised document to V1.1 to incorporate content based upon amendments to Illinois SB0744 and HB4927, as provided by Mike Fries, IGB. Revised to add Handpay meter and clarify sections regarding communication components held in the locked logic area. Additionally, added clarifications surrounding extended play features not breaching the max bet limit.

September 8, 2010 – Revised document to V1.2. Added language regarding the requirement for VGT software to default to a disabled state upon power up. Additionally, added language for the expected behavior of the VGT when a disable command is received during purchased feature games such as fever mode.

March 5, 2012 – Revised document to V1.3. Updated to incorporate revised requirements extracted from GLI-11 V2.1, 'Gaming Devices in Casinos'. Added clarifications for 'hard meters', 'max award', max RTP, and 'odds' requirements, as per discussions with the Illinois Gaming Board. Standardized terminology references throughout the document to reflect "Video Gaming Terminal" or "VGT". Made other cosmetic and formatting changes as appropriate.

August 9, 2019 – Revised document to v1.4. Updated max bet from \$2, to \$4 and increased the max win from \$500 to \$1,199 per statute change enacted 7/1/19.

June 14, 2024 – Revised document to v1.5. Modifications made to support the implementation of payout ticket acceptance at the VGT.

July 22, 2024 – Minor changes with track changes added by CCS provider, Light & Wonder, Inc.