prodiGi Vu™ (UPV)

Technical Manual
Document #70-1040
Revision 2.0

Georgia
September, 2016

TECHNOLOGY TRAINING
& SUPPORT SERVICES

IGT

Modification History

Version	Date	Author	Description
01	July, 2016	M. Bourque	Initial Release
02	September, 2016	M. Bourque	Updated mechanical meters section and back office history

Contact Information

IGT:
328 Urquhart Avenue
Moncton, New Brunswick
Canada E1H 2R6
✆ +1-506-859-7598 (International)

Important Notice

Information in this document is subject to change without notice and does not represent a commitment on the part of IGT. This item is the property of IGT, Moncton, Canada, and contains confidential and trade secret information. It cannot be transferred from the custody or control of IGT except as authorized in writing by an officer of IGT. Neither this item nor the information it contains can be used, transferred, and reproduced, published, or disclosed, in whole or in part, and directly or indirectly, except as expressly authorized by an officer of IGT, pursuant to written agreement.

Copyright© 2016 IGT. All rights reserved**.**

Safety Information

The following warning symbols are used throughout this manual:

This symbol indicates a risk of electric shock.

This symbol indicates a risk of personal injury or a possibility of damage to hardware, software, or data.

This symbol indicates a risk of damage due to electrostatic discharge (ESD).

Observe the following precautions when operating or servicing the COAM:

- Only qualified technicians should attempt repairs on the COAM.
- Always switch off the machine and unplug the AC input cable from the front panel of the Power Distribution Unit before servicing high voltage components.
- Always switch off the machine before removing the logic box or any other electronic components. The machine must also be switched off before unplugging the Power Distribution Unit or the electrical cord in order to protect the machine's electronics from damage.
- Always take precautions against electrostatic discharges (ESD) when handling circuit boards. Wear a grounded wrist strap and avoid placing circuit boards on static generating surfaces such as carpet or upholstered chairs.

Table of Contents

SECTION 1 – INTRODUCTION 1

1.1. ENVIRONMENTAL SPECIFICATIONS 2
1.2. ELECTRICAL SPECIFICATIONS 2
1.3. WEIGHT & DIMENSIONS 3
1.4. EXTERNAL COMPONENT OVERVIEW 4
1.5. BASIC OPERATIONAL INSTRUCTIONS AND FEATURES 5
1.6. INTERNAL COMPONENT OVERVIEW 8
1.7. INSTALLATION GUIDELINES 9

SECTION 2 – DETAILED COMPONENT OVERVIEW 18

2.1. LCD 19
2.2. AC BOX 25
2.3. POWER SUPPLY 27
2.4. LOGIC BOX 29
2.5. PERIPHERAL BOARD 38
2.6. FLEDGE BOARD 41
2.7. USB BUTTON BOARD 42
2.8. BUTTON PANEL AND BUTTONS 45
2.9. MARQUEE BOARD & BEZELS 48
2.10. MECHANICAL METERS 61
2.11. BILL VALIDATOR THEORY OF OPERATION 63
2.12. ICT TAO BILL VALIDATOR 64

SECTION 3 – THEORY OF OPERATION 68

3.1. ELECTRICAL BLOCK DIAGRAM 69
3.2. FUNCTIONAL BLOCK DIAGRAM 70
3.3. BATTERY BACKUP 71
3.4. CLEARING MEMORY 72

SECTION 4 – OPERATOR MENUS 75

4.1. ACCESSING THE BACK OFFICE MENUS 76
4.2. BACK OFFICE MENUS INTRODUCTION 77
4.3. GAMING MACHINE 79
4.4. ACCOUNTING 88
4.5. HISTORY 100
4.6. TEST 117
4.7. OPTIONS 132
4.8. COMM 155

SECTION 5 – ERROR MESSAGES 161

5.1. GENERIC COAM CONFIGURATION ERRORS 162
5.2. SAS COMMUNICATION ERRORS 163
5.3. BILL VALIDATOR ERRORS 163
5.4. DOOR ERRORS 164
5.5. OTHER HARDWARE ERRORS 164
5.6. SOFTWARE ERRORS 165
5.7. PRINTER ERRORS 165

SECTION 6 – PREVENTIVE MAINTENANCE 166

6.1. GENERAL CLEANING 167
6.2. COMPONENT TESTING 169

APPENDIX A – BACK OFFICE MENUS QUICK SETUP GUIDE 172

Section 1 – Introduction

This manual describes the technical aspects of the prodiGi Vu COAM (Coin Operated Amusement Machine). The information contained in this document includes installation instructions, descriptions of the machine's functions and components, along with preventive maintenance procedures.

The objective of *Section 1 – Introduction* is to provide a general overview of the prodiGi Vu, introduce operating conditions, basic functionality, and describe the internal and external components of the COAM.

Section Overview:

- Machine Specifications
- External Component Overview
- Basic Operational Instructions and Features
- Internal Component Overview
- Installation Guidelines

1.1. Environmental Specifications

NOTE: Before the COAM is powered on, it must be stored at ambient room temperature for four hours or until no condensation is present.

Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-25°C to 70°C (-13°F to 158°F)
Relative humidity	5% to 95%

Table 1 – Environmental Specifications

1.2. Electrical Specifications

AC supply voltage	100-240VAC 50-60Hz
Maximum current	3A

Table 2 - Electrical Specifications

1.3. Weight & Dimensions

The approximate weight of prodiGi Vu is 104Kg (230lbs). The dimensions of the prodiGi Vu are represented in Figure 1.

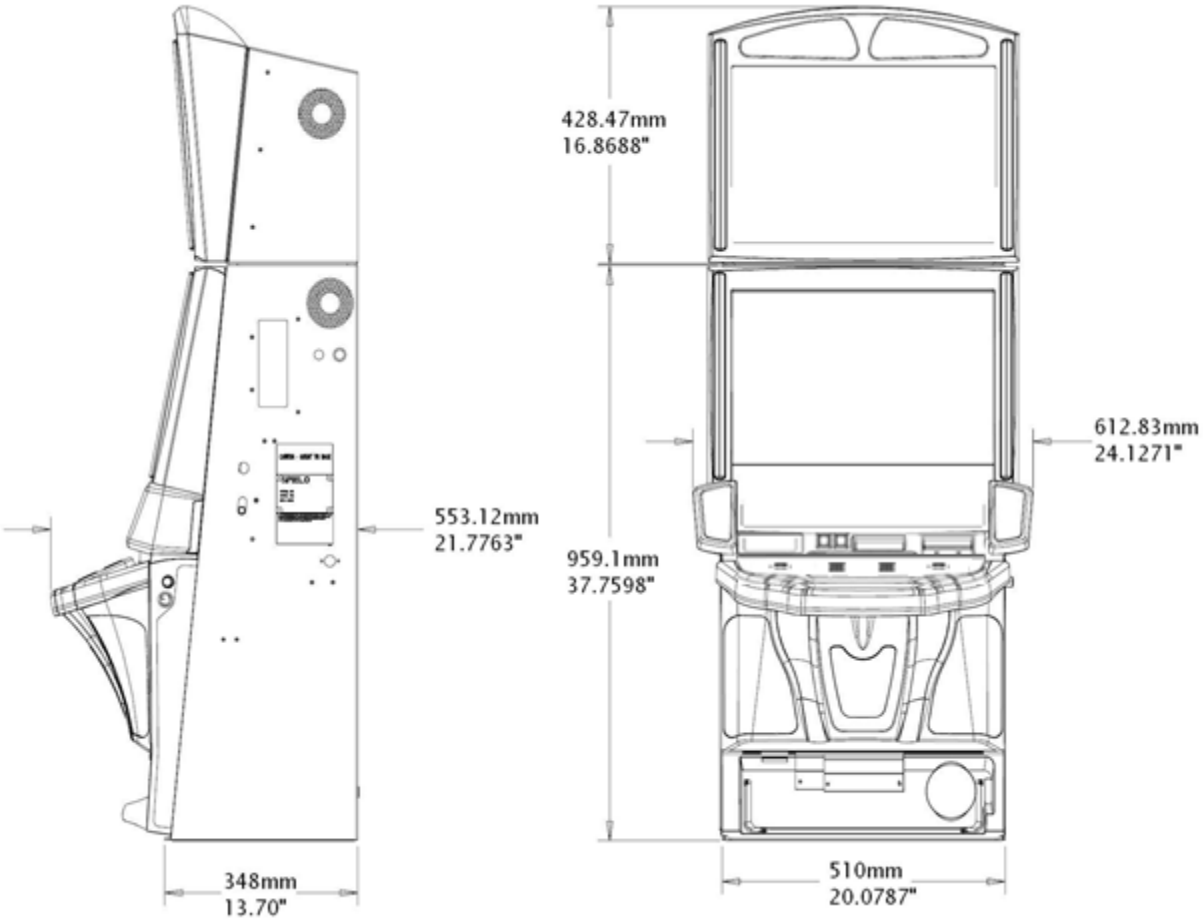

Figure 1 - prodiGi Vu Dimensions

1.4. External Component Overview

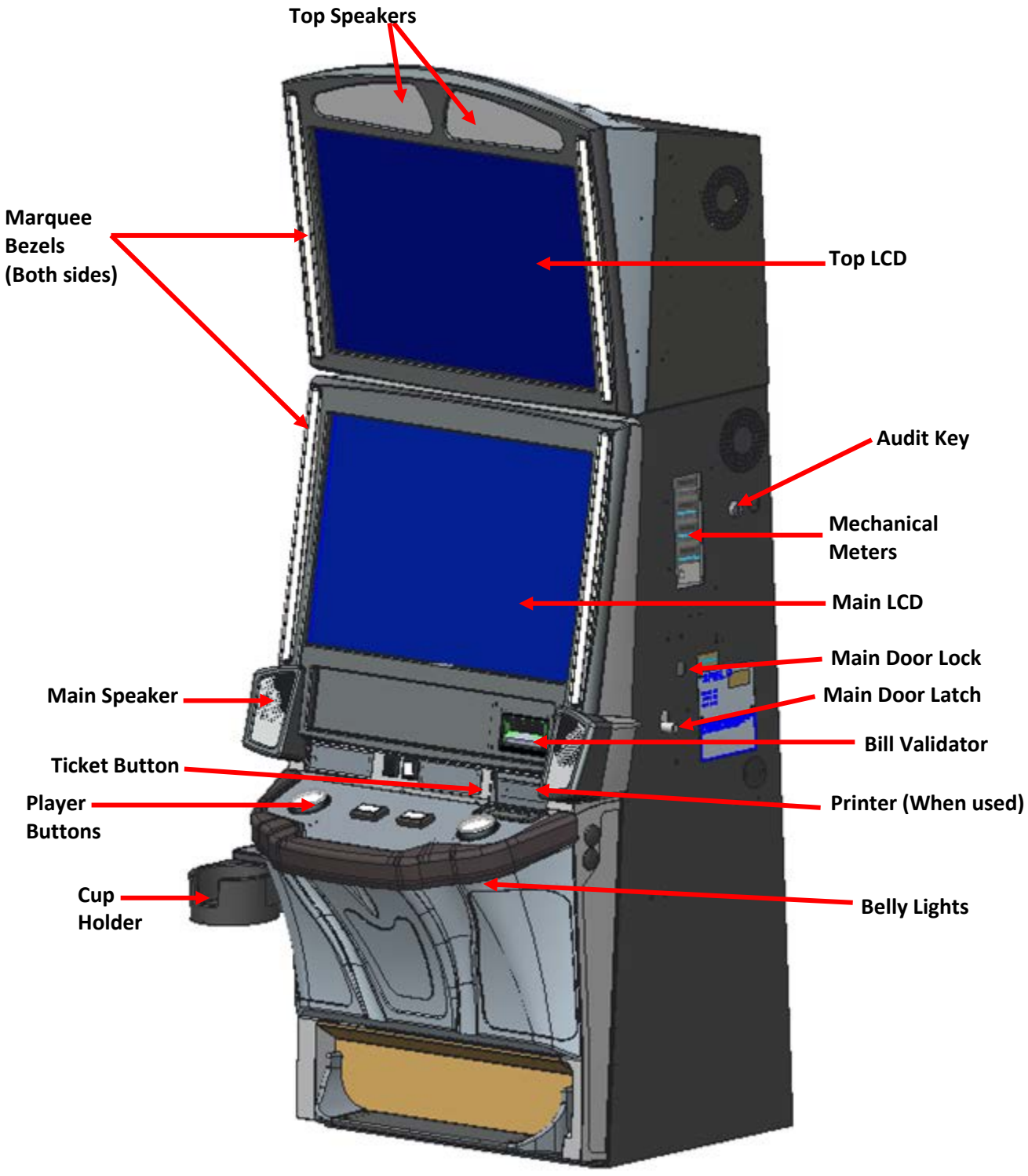

Figure 2 – External Components

1.5. Basic Operational Instructions and Features

The prodiGi Vu has two exterior doors: the main door and top door. The top door cannot be opened unless the main door has been opened first.

1.5.1. Opening Main Door

To open the main door:

1. Insert key into the main door lock.
2. Turn the key.
3. Lift up on the latch and open the door.

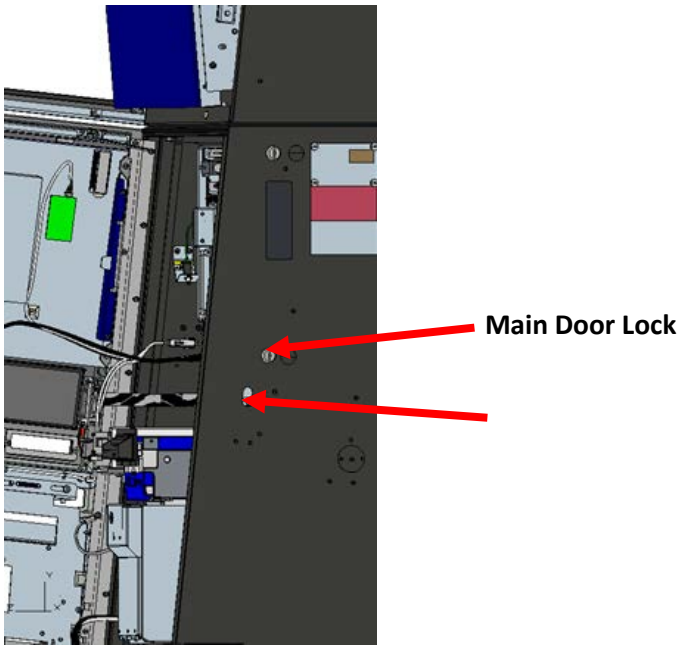

Figure 3 - Main Door Lock and Latch

1.5.2. Opening Top Door

To open the top door:

1. Unlock and open the main door.
2. Push up the top door latch and open the top door.

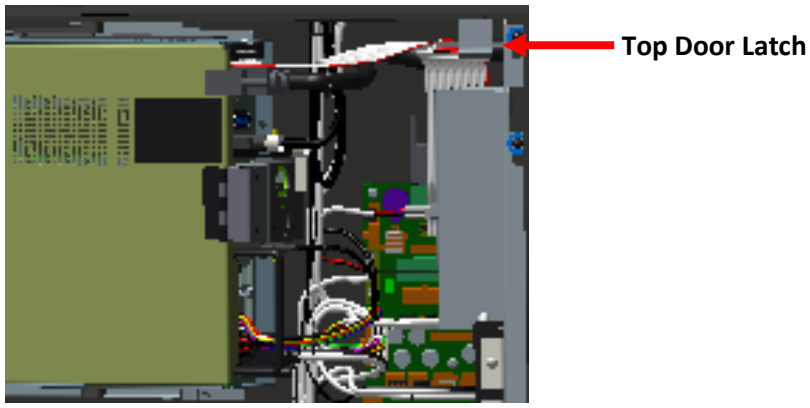

Figure 4 - Top Door Latch

1.5.3. Opening Logic Door

To open the logic door:

1. Unlock and open the main door.
2. Insert the key into the logic box door lock.
3. Turn the key to open the logic door.

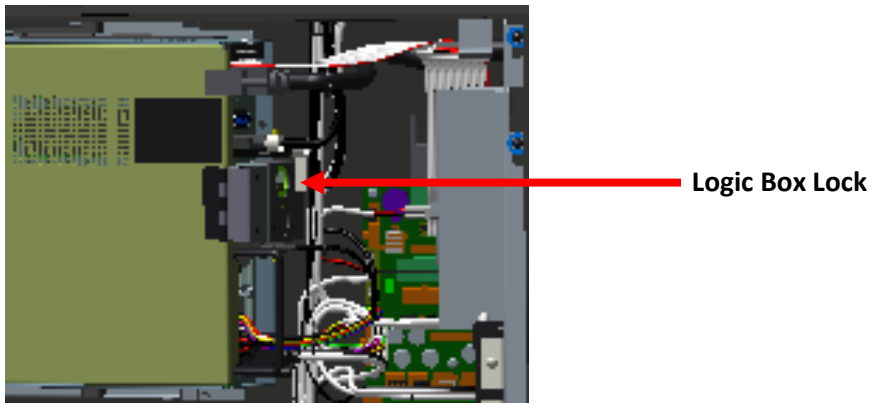

Figure 5 - Logic Box Lock

1.5.4. Door Monitoring

Each of the prodiGi Vu doors has a door monitoring switch to warn the software when a door has been opened.

- Top Door
- Main Door
- Logic Door

1.5.5. Service Lighting

The prodiGi Vu has three LED service lights. Two are located behind the main LCD monitor and one near to the power switch box. The service lights are activated by a mechanical switch on the main door and are functional when the COAM is powered off but still plugged into the electrical outlet.

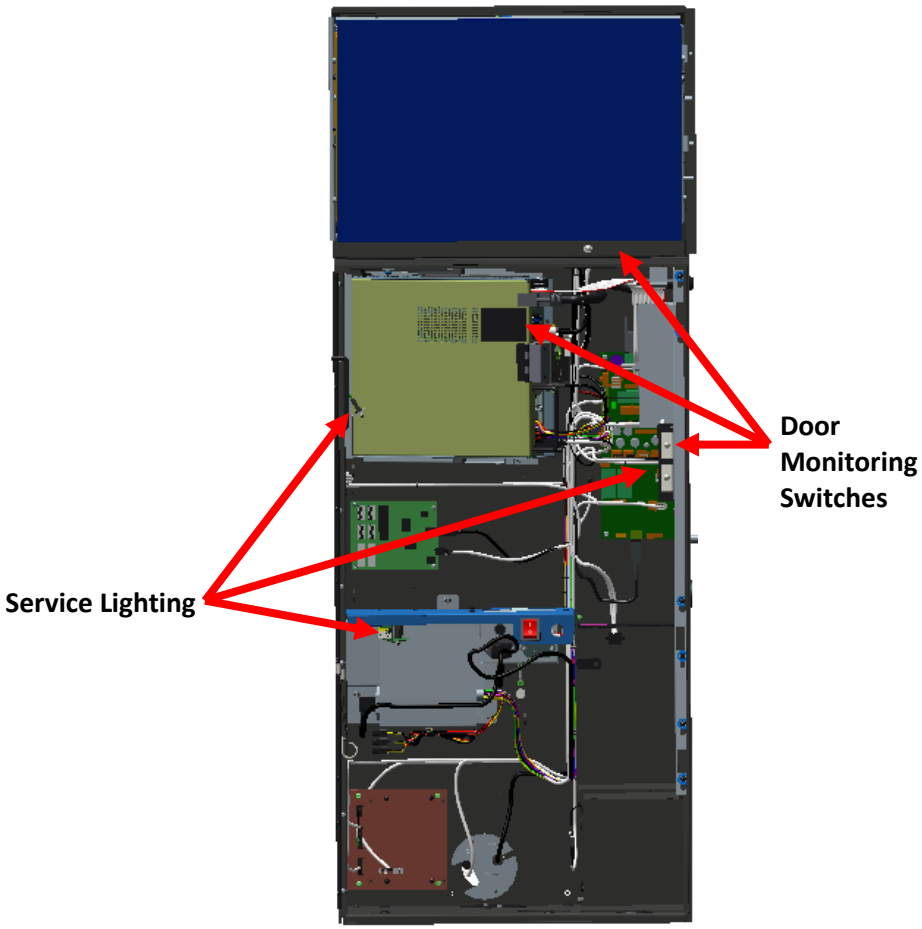

Figure 6 – Door Monitoring Switches & Service Lighting

1.6. Internal Component Overview

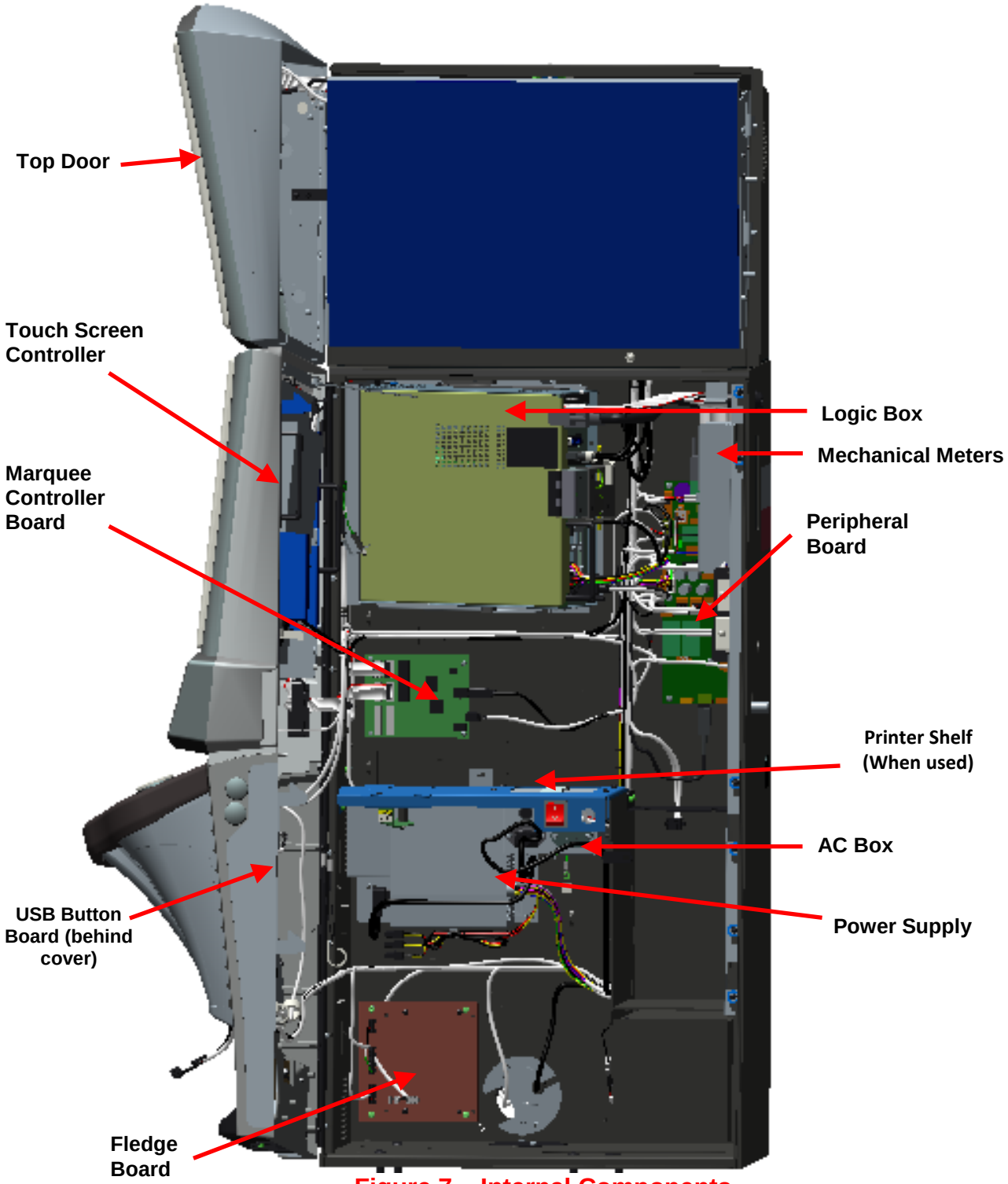

Figure 7 – Internal Components

1.7. Installation Guidelines

WARNING: To avoid personal injury, these instructions should only be carried out by qualified technical service personnel.

Follow the instructions in this section to install the COAM and bases.

WARNING: To avoid personal injury, the COAM must be securely attached to the base. The base must be securely attached to the floor or wall, when using an unapproved base. Approved bases are listed in Table 3. Tipping, shaking, or rocking the machine may cause injury or death.

The COAM can be installed in any of the following ways:

- **Option 1 -** Freestanding COAM with backrest (for approved bases only).
- **Option 2 -** Freestanding COAM against a wall or back-to-back without backrest brackets (for approved bases only).

1.7.1. Option 1 – Freestanding COAM with Backrest

Obtain a suitable base to install the COAM. If the COAM is going to be freestanding, install the backrest brackets on to the back of the approved COAM base. A list of approved bases is given in Table 3.

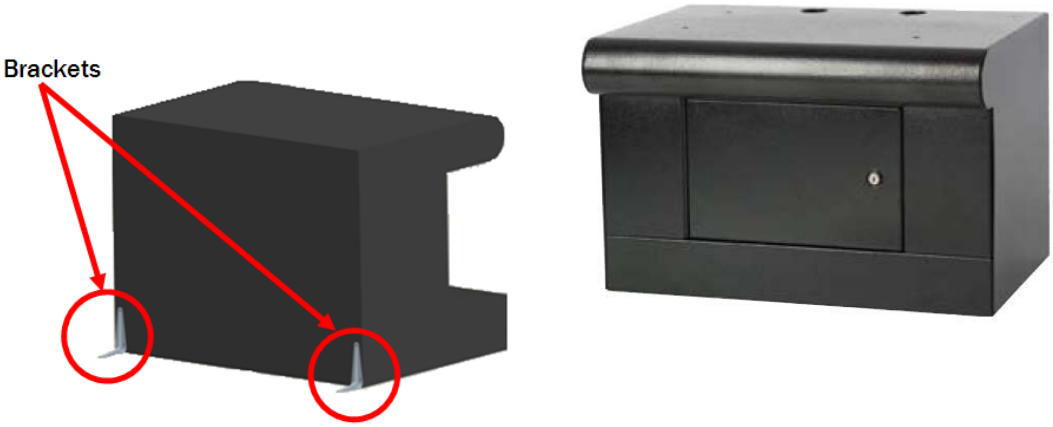

Figure 8 - Approved Bases with Backrest Brackets

Approved and Unapproved Bases

Approved Bases (compliant) — All bases that have been tested for compliance to the physical stability tests are listed in the EN 60335-2-82, UL22 and CAN/CSA-E60335-2-82 standards. Tests must be performed with the prodiGi Vu installed on the base. Approved bases are listed in Table 3.

Unapproved Bases (Non-compliant) — All bases that have not been tested for compliance to the physical stability tests are listed in the EN 60335-2-82, UL22 and CAN/CSAE60335- 2-82 standards.

Manufacturer	Part Number	Notes
VSR Industries	SMB000823000024	Freestanding without wall (backrest bracket required)
VSR Industries	SMB000821000023	Freestanding
VSR Industries	SMB000815000005	Freestanding without wall (backrest bracket required)
Catapult	B1-041610	Freestanding without wall (backrest bracket required)
American Metal Fab Inc	GASY-0001A	Freestanding without wall (backrest bracket required)

Table 3 - Approved Bases for freestanding prodiGi Vu

1. Drill four mounting holes and a cable hole in the top of the base.

- The drill pattern for the **VSR Industries base** is shown in Figure 9.
- The drill pattern for the **Catapult and American Metal Fab Inc. base** is shown in Figure 10.

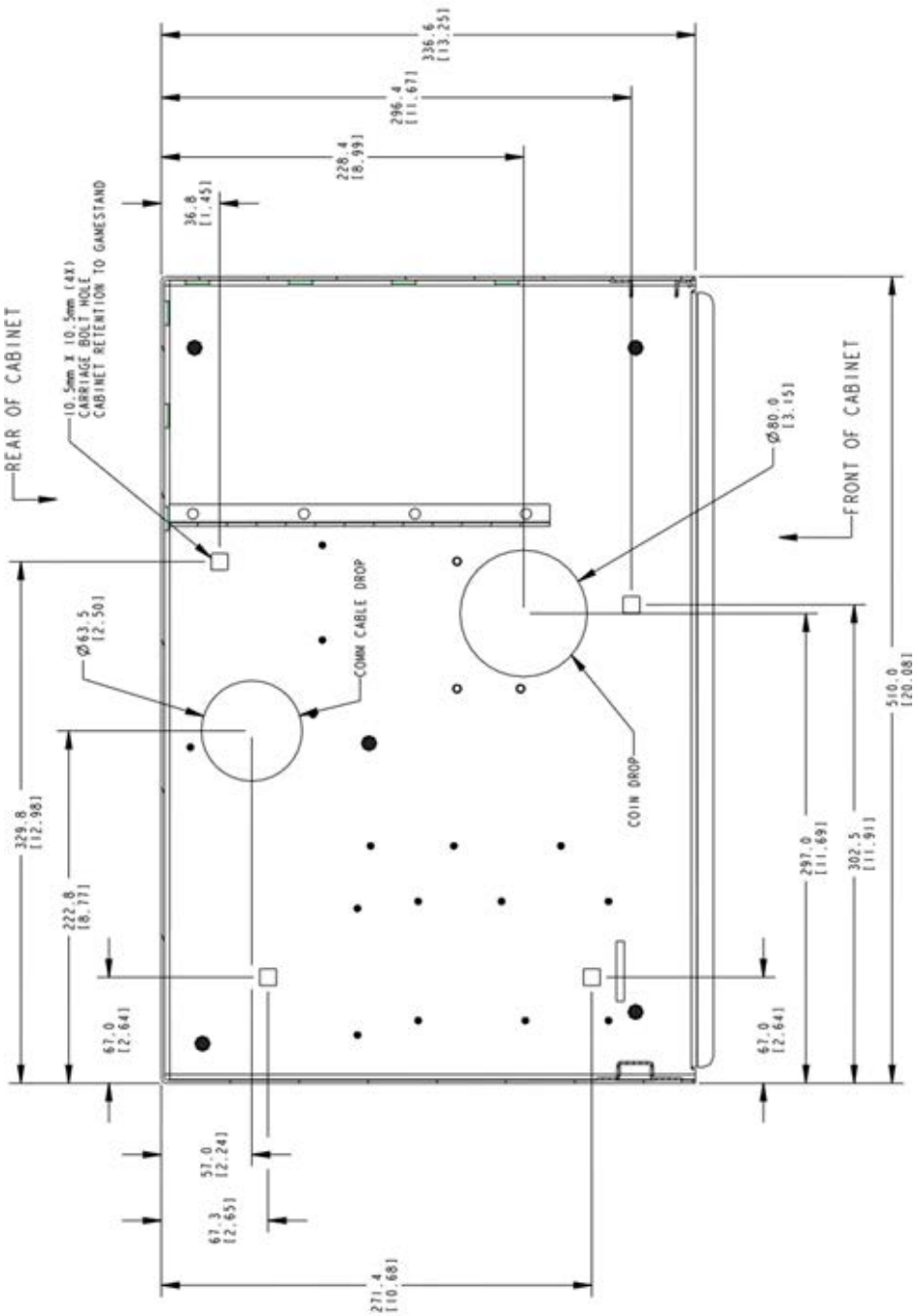

Figure 9 – Drill Pattern, VSR Industries Bases

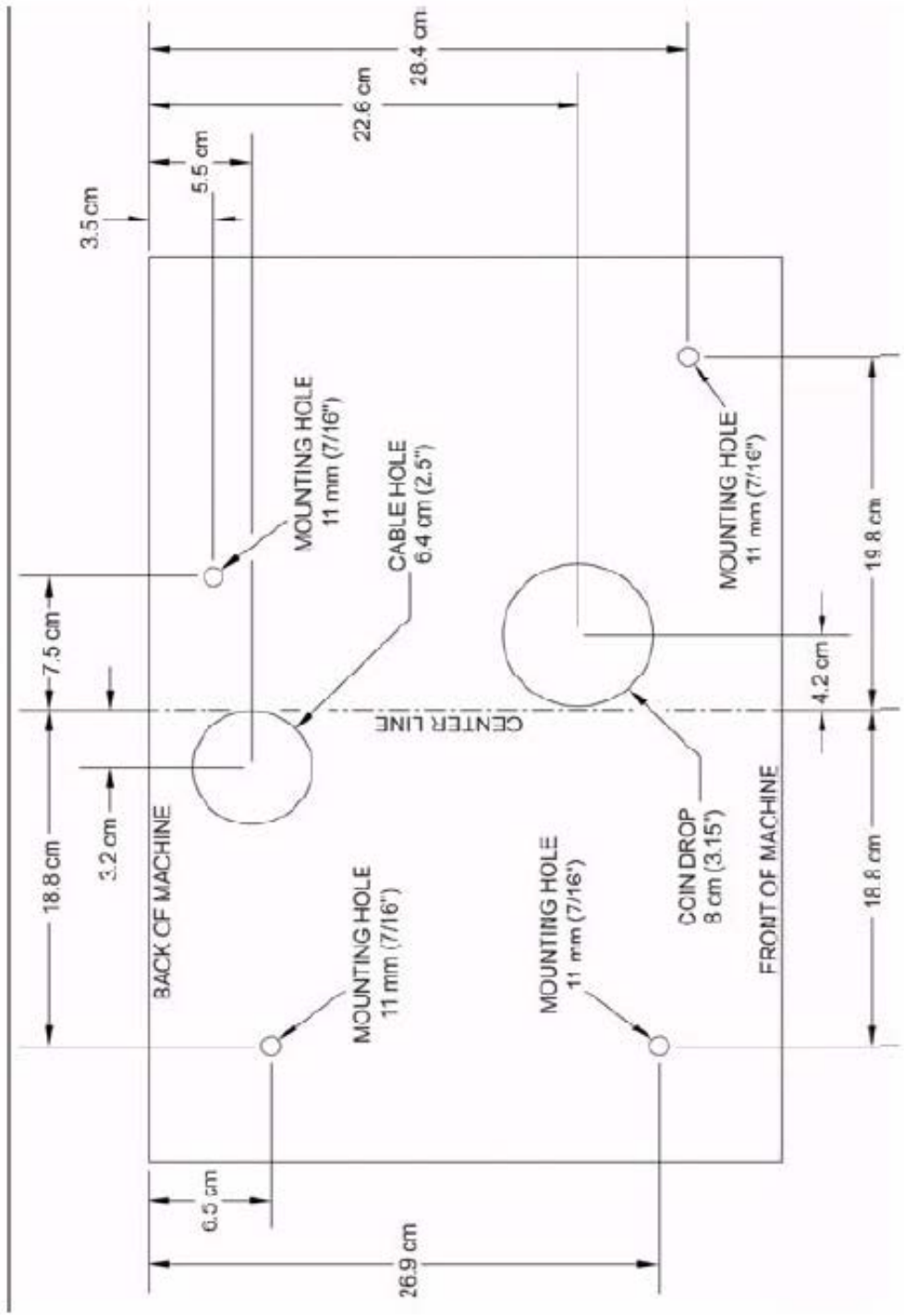

Figure 10 - Drill Pattern, Catapult and American Metal Fab Inc. Bases

2. Mount the two backrest brackets to the base bottom with self-tapping screws.

The prodiGi Vu was tested with a 3” X 4” metal shelf bracket, see Table 4 for description.

Figure 11 - Backrest Bracket

Description	Length	Width	Safe Working Load
3” X 4” Metal Shelf Bracket	3 in	4 in	10 lbs

Table 4 - Backrest Bracket Description

3. Unpack the COAM and lift it on the base.

4. Insert the four mounting bolts through the bottom of the COAM. Place a washer and nut on each of the four bolts inside the stand and tighten them. Ensure that no wires are trapped when the bolts are tightened. Ensure that the machine is securely attached to the base.

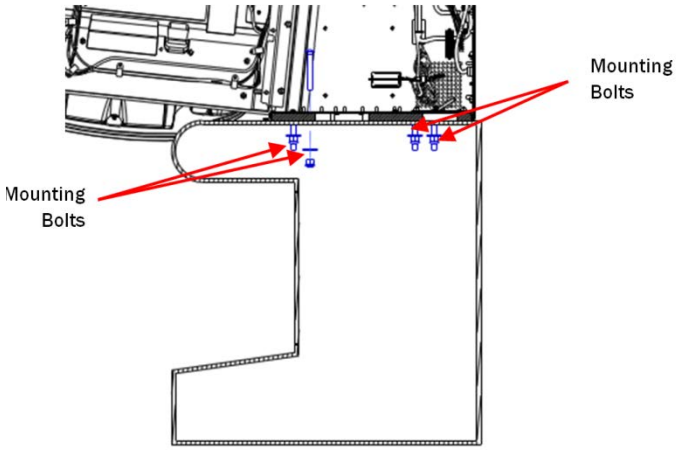

Figure 12 - Backrest Bracket

5. Once the COAM is installed on the base, place it in the desired location.

1.7.2. Option 2 – Freestanding against a Wall or back-to-back without Backrest Brackets

WARNING: **To avoid personal injury, use Spielo approved bases only, see** Table 3.

If the COAM is installed freestanding without the backrest brackets, the back of the COAM must be no closer than 12” from a wall.

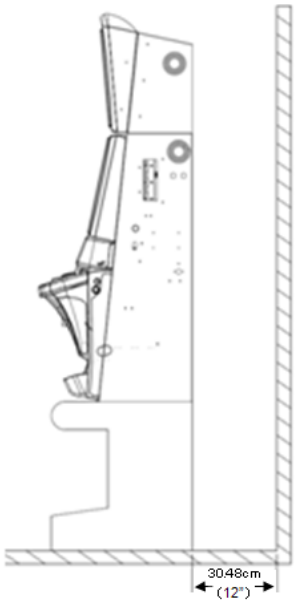

Figure 13 - Spacing between COAM and Wall

Two COAMs should be placed back-to-back with no more than 12 inches between them.

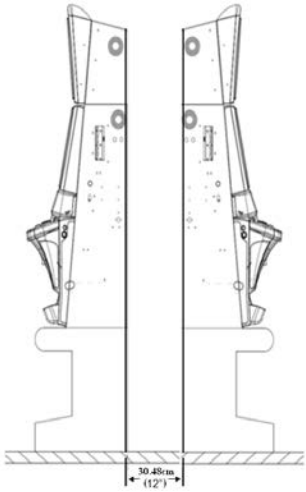

Figure 14 – Back-to-back Spacing

1.7.3. Spacing Between COAMs

NOTE: When installing a COAM at a site, you should allow at least 70.49cm (27.75”) center to center, between COAMs to prevent door interference.

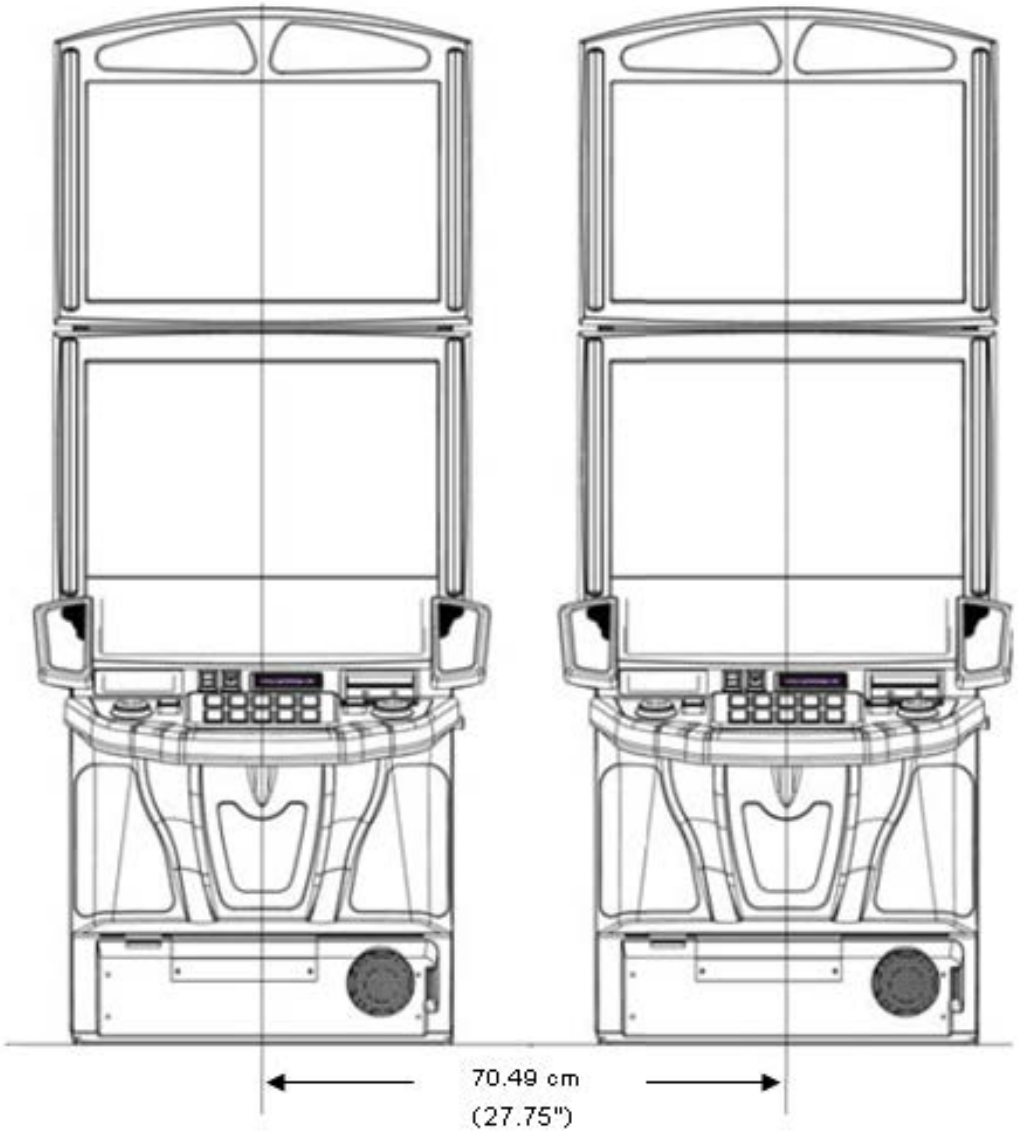

Figure 15 - Spacing between COAMs

1.7.4. Routing Electrical and Network Cables

There are two holes where the electrical and network cables can be routed into the prodiGi Vu cabinet. One cable access hole is in the bottom plate, the other is on the rear wall of the cabinet.

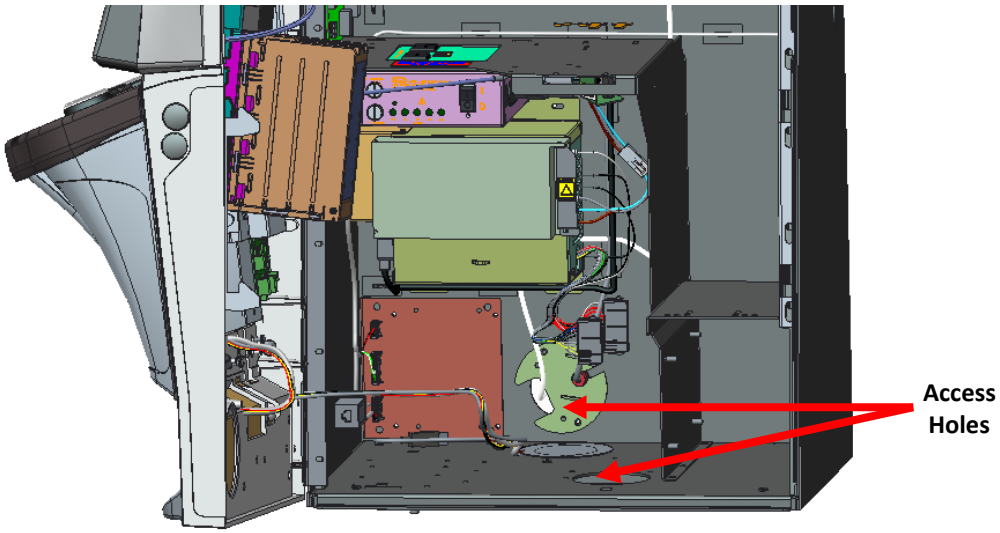

Figure 16 - Cabinet Access Holes

Follow these steps to connect the electrical and network cables to the prodiGi Vu:

1. Route any network cables into the cabinet through one of the cable access holes. If the cable hole in the rear wall of the terminal is being used, attach the supplied access cover plate over the hole, using the two nuts provided. Any network cables should also be routed through the notch in the cover plate.

2. Route the power cord through one of the cable access holes.

3. Connect the network cables to the appropriate communication ports inside the terminal:
    - Fledge Board
    - Serial RS-232 (SAS)

1.7.5. Powering ON

NOTE: Before the COAM is powered on, it must be stored at ambient room temperature for four hours, or until no condensation is present.

Before powering on the COAM, locate the AC power cord in the cabinet base, route the power cord outside of cabinet through the rear access hole and connect to a dedicated AC receptacle. The maximum current consumption for each COAM is listed on page 2. Also, ensure that the communication cables are properly connected to the network.

1. With the main door open, turn the power switch to the “ON” position.

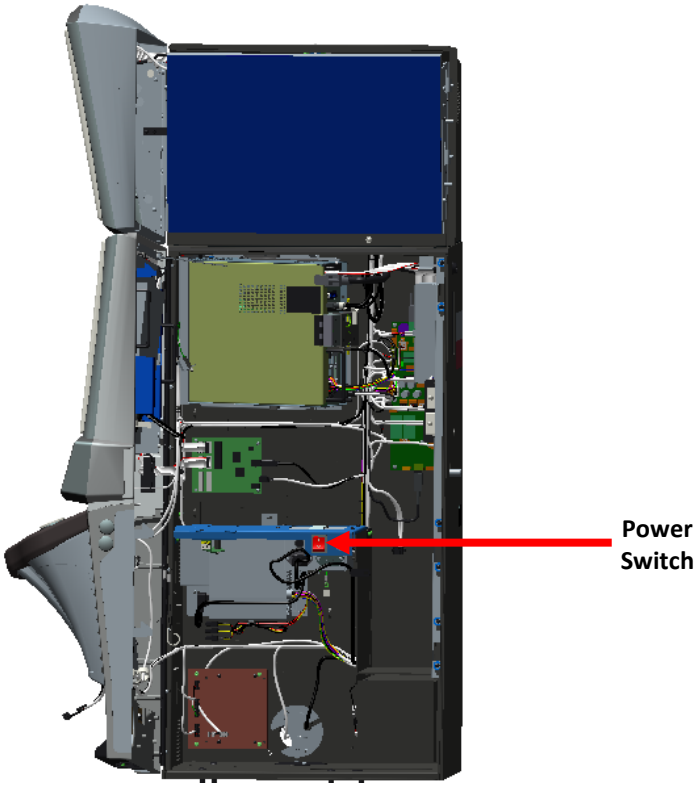

Figure 17 – Powering On

2. Once the machine is booted up (displays status messages), access the software menu using the Technician key switch and configure the COAM.

   Refer to the appendix on page 172 for instructions on how to setup the back office menus.

Section 2 – Detailed Component Overview

Section 2 – Detailed Component Overview will provide specific information for each component of the prodiGi Vu. This section will also describe removal, connectivity, and operational instructions.

Section Overview:

- LCD
- AC Box
- Power Supply
- Logic Box
- Peripheral Board
- Fledge Board
- USB Button Board
- Button Panel and Buttons
- Marquee Board & Bezels
- Mechanical Meters
- Bill Validator

2.1. LCD

WARNING: Scratches on the touch screen will effect touch screen calibration and permanently damage the LCD.

The prodiGi Vu is equipped with two 22” LCD monitors – one top LCD and one main LCD. The LCD panels for both monitors are the same. The main LCD has touch screen capabilities and handles for removal. The touch screen is capacitive and is susceptible to damage from deep scratches. The top LCD does not have touch screen capabilities or handles, however it is protected with a lexan sheet and has hinges to ease installation and removal.

Video input for both monitors is DVI-D, which is provided by the logic box. They also each have an unused VGA connector. Both monitors are powered by +12VDC from the Peripheral Board. The main LCD touch screen controller is connected to the logic box via USB and is also powered (+5VDC) from the same USB connection.

Figure 18 - LCD Monitor Assembly Front View

2.1.1. LCD Connectors

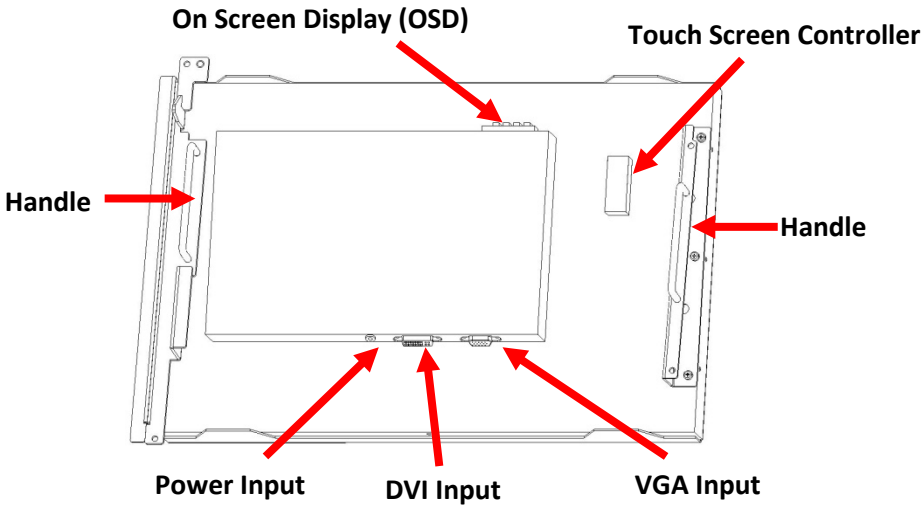

Figure 19 - Main LCD Monitor Assembly Rear View

2.1.2. Picture Calibration

WARNING: **The LCD Settings have been calibrated at the factory; Spielo does not recommend changing these settings.**

The monitor picture can be calibrated via the video control board located on the top of the back of the monitor.

The LCD On Screen Display (OSD) menu can be accessed by using the OSD control board switches located on the top of the back of the monitor. From left to right the calibration buttons are: MODE, SELECT, DOWN, UP.

1. Press the MODE button to enter the OSD menu.

2. Use the other three buttons to navigate, enable, and disable features.

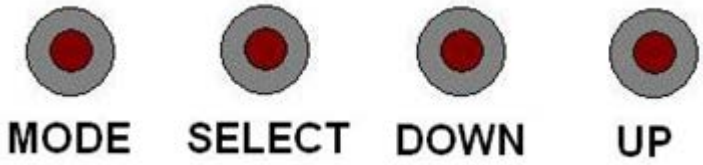

Figure 20 - LCD Picture Adjustment Buttons

2.1.3. Touch Screen Calibration

1. Access the back office menus via Technician or Audit key.

2. One of the buttons on the button panel will be illuminated. Press the illuminated button.

   OR

3. There is also an icon on the main screen that reads “CALIBRATE TOUCH SCREEN” this icon performs the same action.

4. Follow the on-screen instructions to calibrate the touch screen.

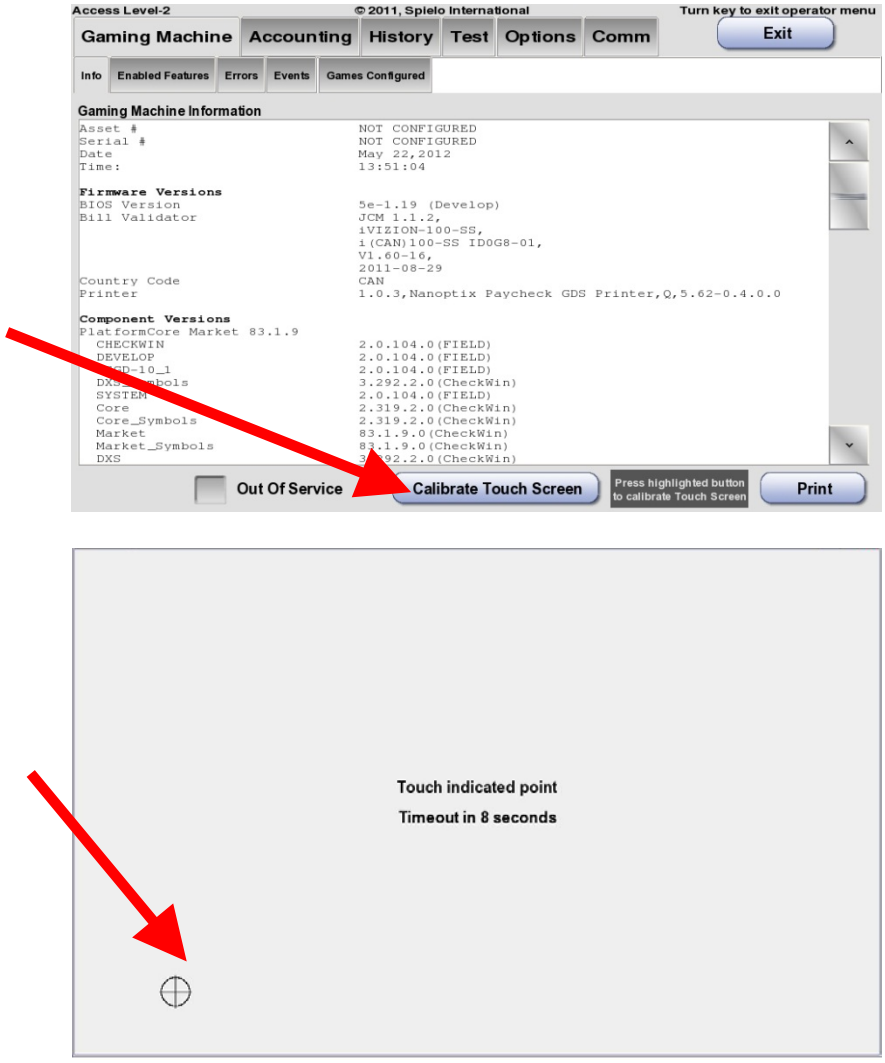

Figure 21 - Touch Screen Calibration

2.1.4. Main LCD Removal

WARNING: When removing the LCD, ensure that it is powered off and held securely before removing the final screw.

Tools Required:

- 1 x #1 Phillips Screwdriver

1. Open the main door and power OFF the prodiGi Vu.

2. Disconnect the following:
   - The Touch Screen Controller USB
   - The power connector
   - The DVI connector

3. Remove the four #1 Phillips screws holding the monitor in place.

4. Grasp the two handles and pull back to the left to remove the LCD monitor.

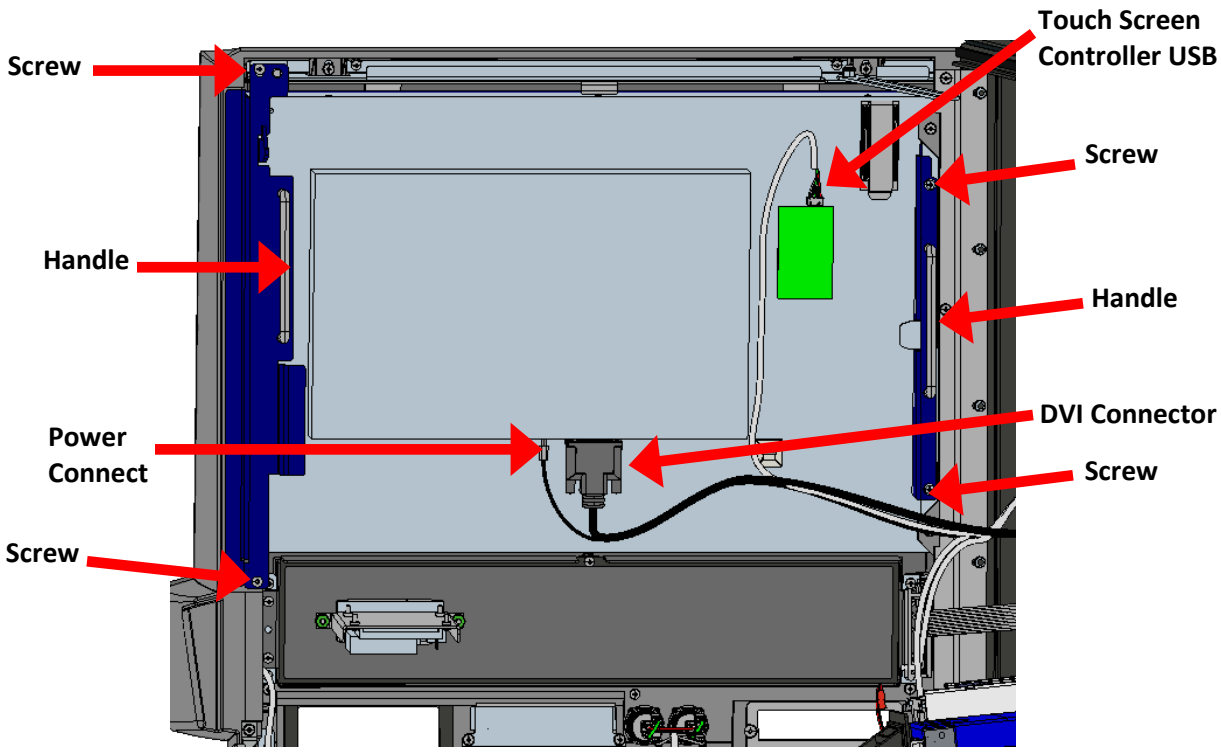

Figure 22 - Main LCD Removal

2.1.5. Top LCD Removal

NOTE: The monitor will be sitting on two hinges installed on the top of the monitor to prevent the monitor from falling once all the screws are removed.

Tools Required:

- 1 x #1 Phillips Screwdriver

1. Open the main and top doors, and power OFF the COAM.
2. Remove the four #1 screws holding the monitor in place. The left and right side screws are identical in their placement.
3. Lift off hinges.

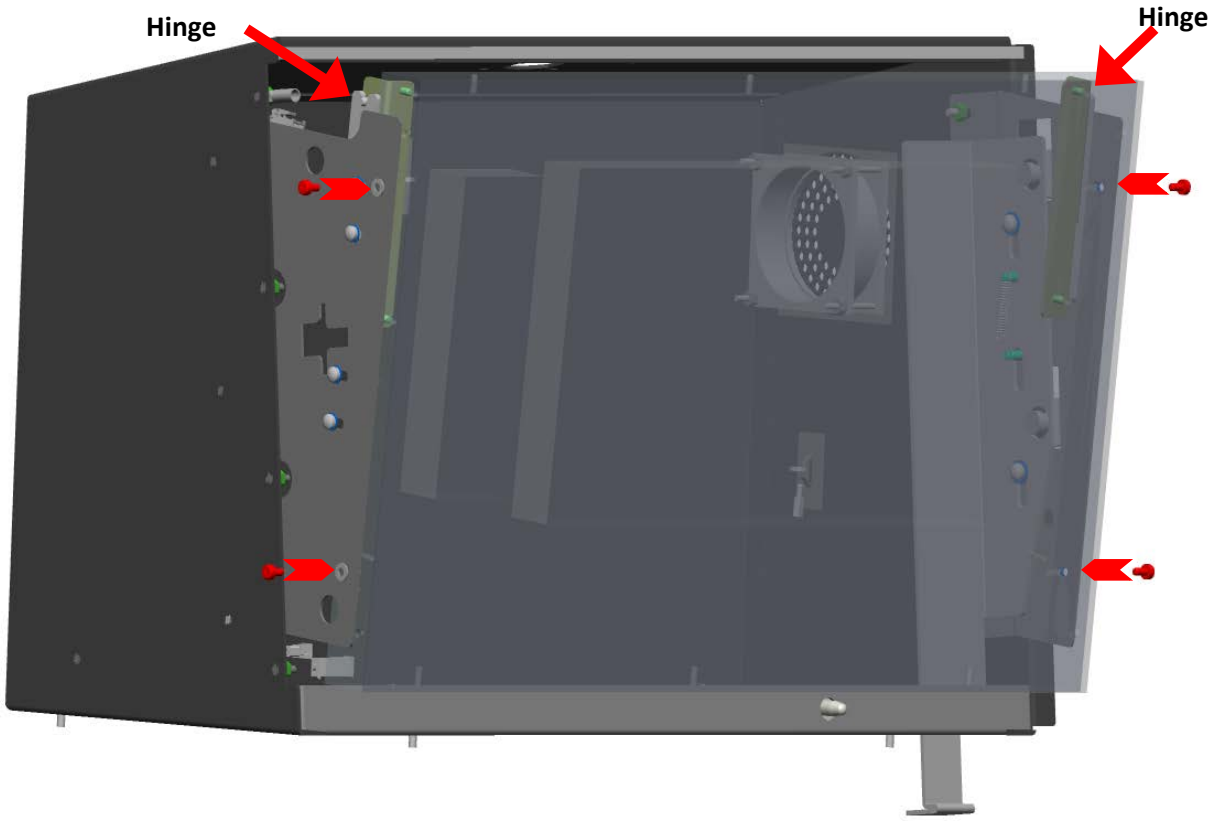

Figure 23 - Top LCD Removal

4. Disconnect the following from the LCD:
    - The power connector
    - The DVI connector

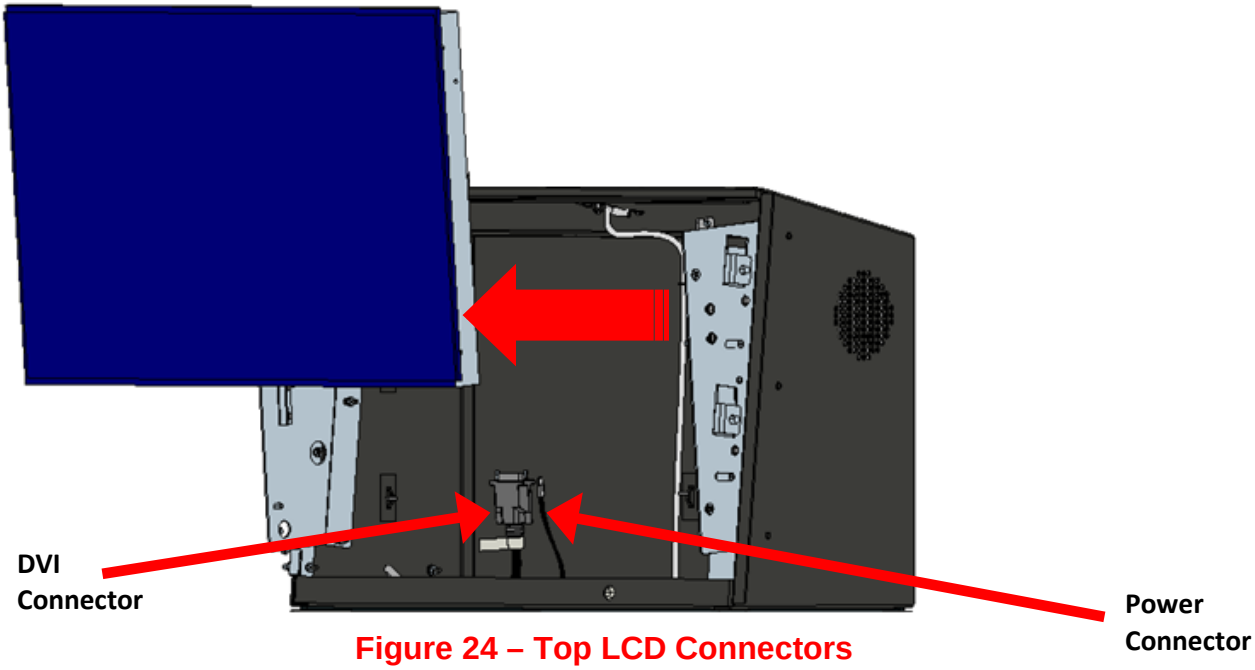

Figure 24 – Top LCD Connectors

2.2. AC Box

WARNING: The AC box contains high voltage. Always switch off the machine and unplug the power cord before servicing.

WARNING: For safety reasons, only use a fuse with the ratings specified on the front panel of the AC box.

WARNING: Service outlets are fused and should not be used for high current devices.

The AC box is a device that provides auxiliary AC outlets and protects the peripherals from electrical damage.

2.2.1. AC Box Connectors

1. **Fuse**: The switch box provides one AC fuse (5Amp/250V slow blow) for main power. Only use replacement fuses with the ratings specified on the front panel of the AC Box.

2. **AC input**: Connector for machine's AC power cord.

3. **Un-switched AC output**: This connector supplies AC power to the DC power supply.

4. **Service Outlets (2):** On the top panel of the AC box there are two un-switched service outlets that can provide power.

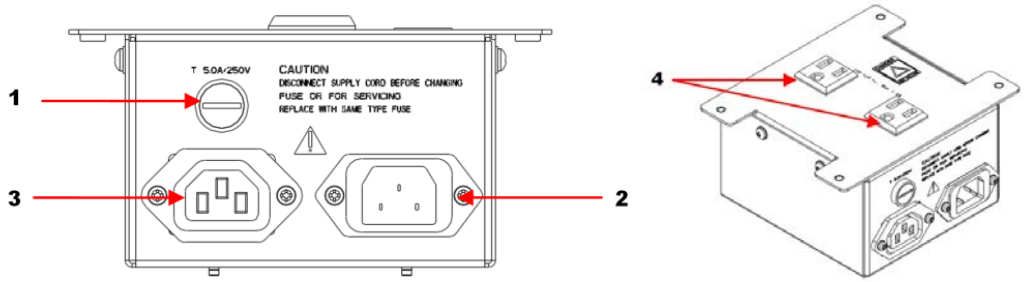

Figure 25 – AC Box Connectors

2.2.2. AC Box Removal

Tools Required:

- 1 x #1 Phillips Screwdriver
- 1 x 7mm Nut Driver

Follow these steps to remove the AC box from the COAM:

1. Switch the COAM OFF.
2. Unplug the machine's power cord from the AC receptacle.
3. Disconnect the power cables from the AC input and AC output.
4. Remove the four #1 screws that secure the AC box to the printer shelf.
5. Disconnect the ground harness from underneath the AC box and remove the 7mm nut securing it.

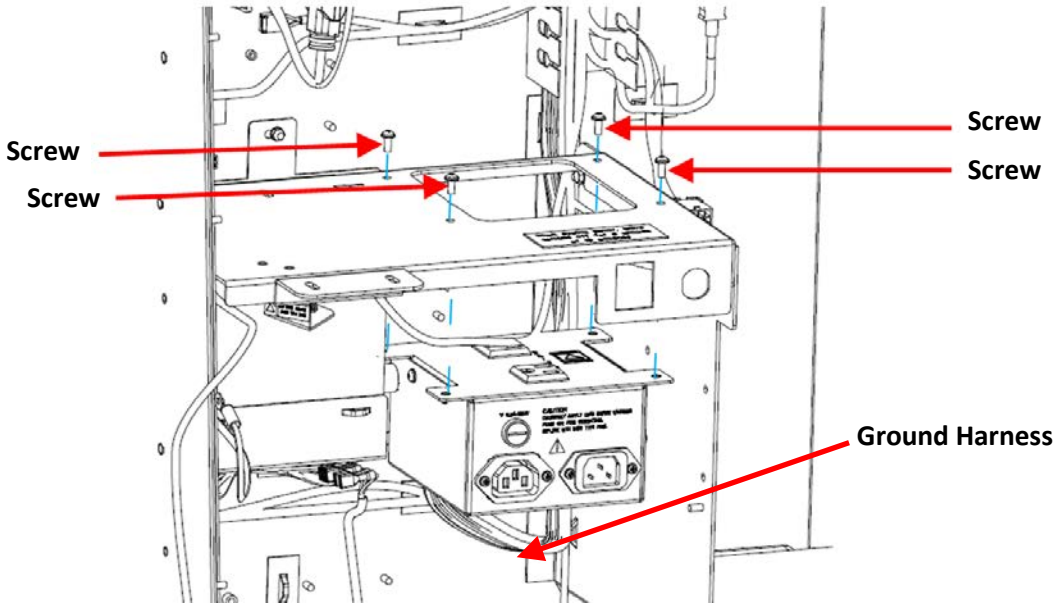

Figure 26 - AC Box Screws

2.3. Power Supply

WARNING: The power supply contains high voltage. Always switch off the COAM and unplug the power cord before servicing the power supply.

The prodiGi Vu has a 450 Watt power supply which provides power for most of the machine's DC-powered components. The power supply has DC outputs switched using a soft switch, this allows 5V standby to be used for service LEDs. The power supply auto-switches between 120VAC and 220VAC.

Figure 27 - Power Supply

2.3.1. Power Supply Removal

Tools Required:

- 1 x M3 (5.5mm) Nut driver

Follow these steps to remove the power supply assembly from the machine.

1. Open the main door and power OFF the machine.

2. Disconnect the following connectors:
   - 20 pin connector from the logic box
   - 16 pin connector from the peripheral board

3. With the nut driver, remove the three M3 nuts that secure the power supply bracket to the rear wall of the cabinet.

4. Disconnect the AC power harness from the rear of the power supply once the nuts have been removed.

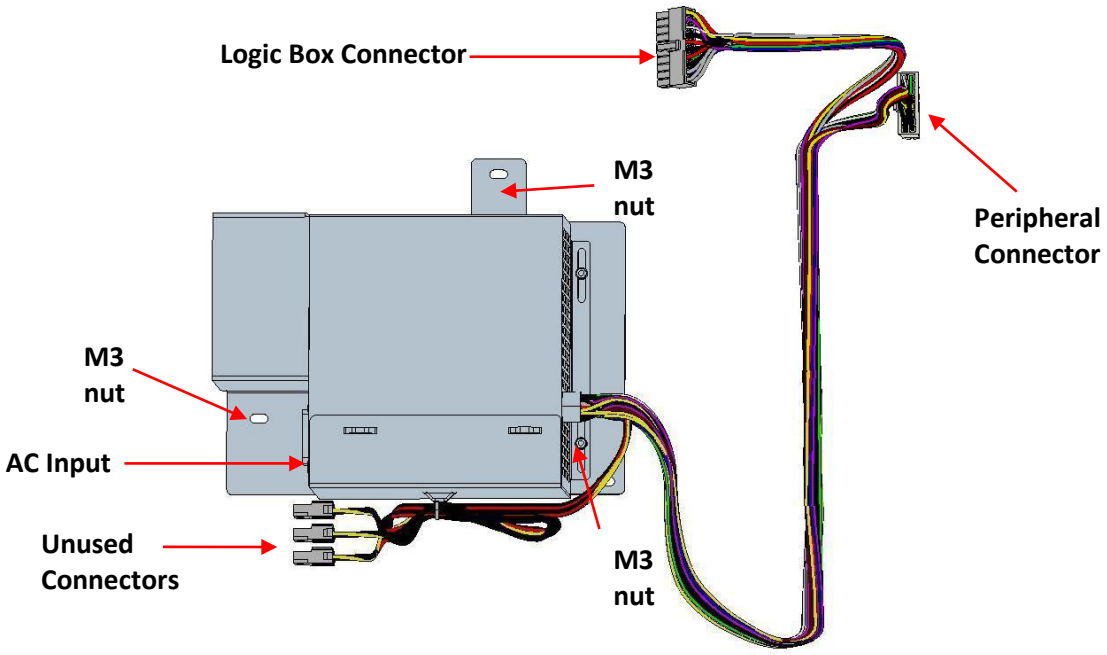

Figure 28 - Power Supply Assembly Nuts

2.4. Logic Box

WARNING: The circuit boards housed inside the logic box contain static-sensitive components. Take all necessary precautions against ESD. Always power off the COAM before servicing the logic box or any of its components.

The logic box is the core of the COAM and is responsible for the functionality of the peripherals and games. The logic box houses the main logic board and the I/O board. These two circuit boards control all of the COAM's functions. The logic box also contains a video card and Compact Flash card.

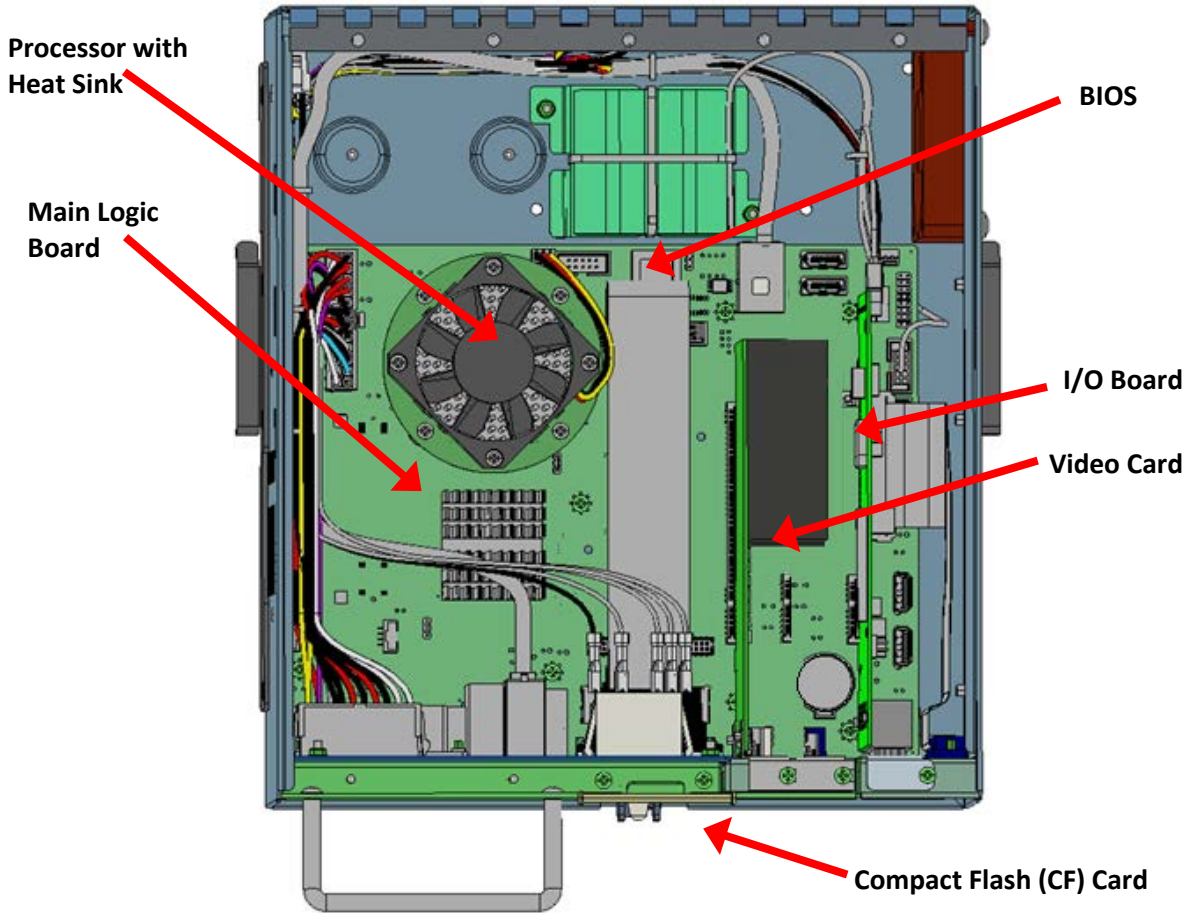

Figure 29 - Logic Box Components

2.4.1. Logic Box Connectors

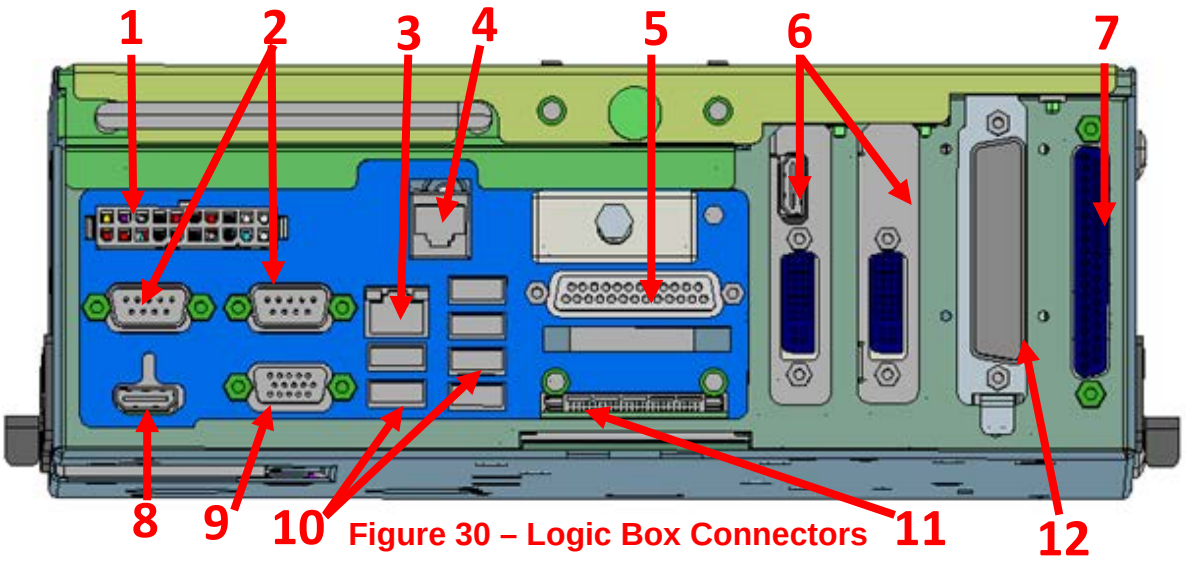

Figure 30 – Logic Box Connectors

1.	**Power**	Provides power to the logic box.
2.	**Serial Ports**	Serial 1 (Left): Printer (if used) Serial 2 (Right): SAS
3.	**Ethernet Port 1**	Not used
4.	**Ethernet Port 2**	Not used
5.	**Parallel Port**	This 25-pin parallel port is used for Master Resets.
6.	**Video Card**	Dual Slot Video Card Slot 1 and Slot 2 (from left to right) Slot 1 HDMI: send video signal to the top LCD Slot 1 DVI: send video signal to the main LCD Slot 2 DVI: not used
7.	**DB37 Pin Connector**	Not used
8.	**Audio Out**	This HDMI connector provides audio signals to the multichannel audio amplifier board.
9.	**VGA**	Not used
10.	**USB Ports**	These six USB ports are available for communicating with USB devices. This may include a LED Marquee Control Board, Touch Screen Controller, USB Button Board, or other devices.
11.	**Compact Flash Slot**	The compact flash slot contains the storage media where the software and games are stored.
12.	**DB78 Pin Connector**	The DB78 pin connector communicates to the peripherals. Peripherals connected to the 78 pin connector include: Bill Validator, Door Switches, Key Switches, and Cabinet ID.

Table 5 – Logic Box Connectors

2.4.2. Logic Box Removal

WARNING: **The circuit boards housed inside the logic box contain static-sensitive components. Take all necessary precautions against ESD. Always power off the COAM before servicing the logic box or any of its components.**

Tools Required:

- 1 x (small) Flat Screwdriver

1. Unlock and open the main door.
2. Power OFF the COAM and unlock logic box.
3. Disconnect all cables from the front of the logic box. Use a flat screw driver to loosen any screws and thumbscrews that are tight.
4. Push on the metal tab behind the logic box to release.

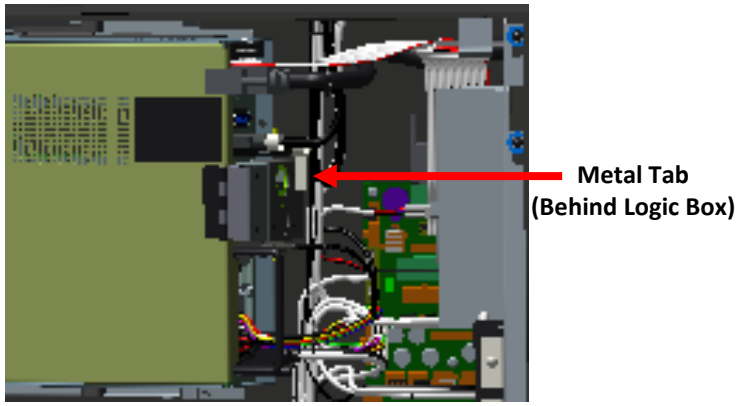

Figure 31 – Logic Box Removal (Metal Tab)

5. Pull the logic box from the COAM.

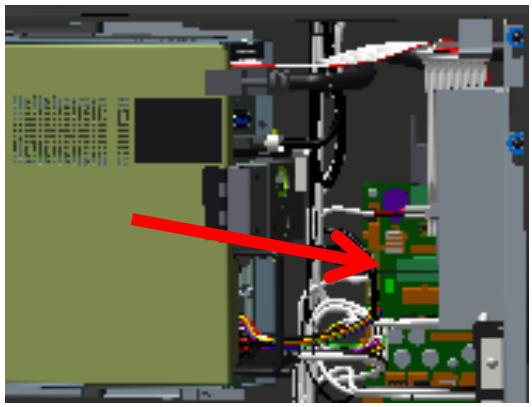

Figure 32 – Logic Box Removal

2.4.3. Logic Box Disassembly

Tools Required:

- 1 x #1 Phillips Screwdriver
- 1 x M3 (5.5mm) Nut driver

1. Disconnect all harnesses (indicated below).

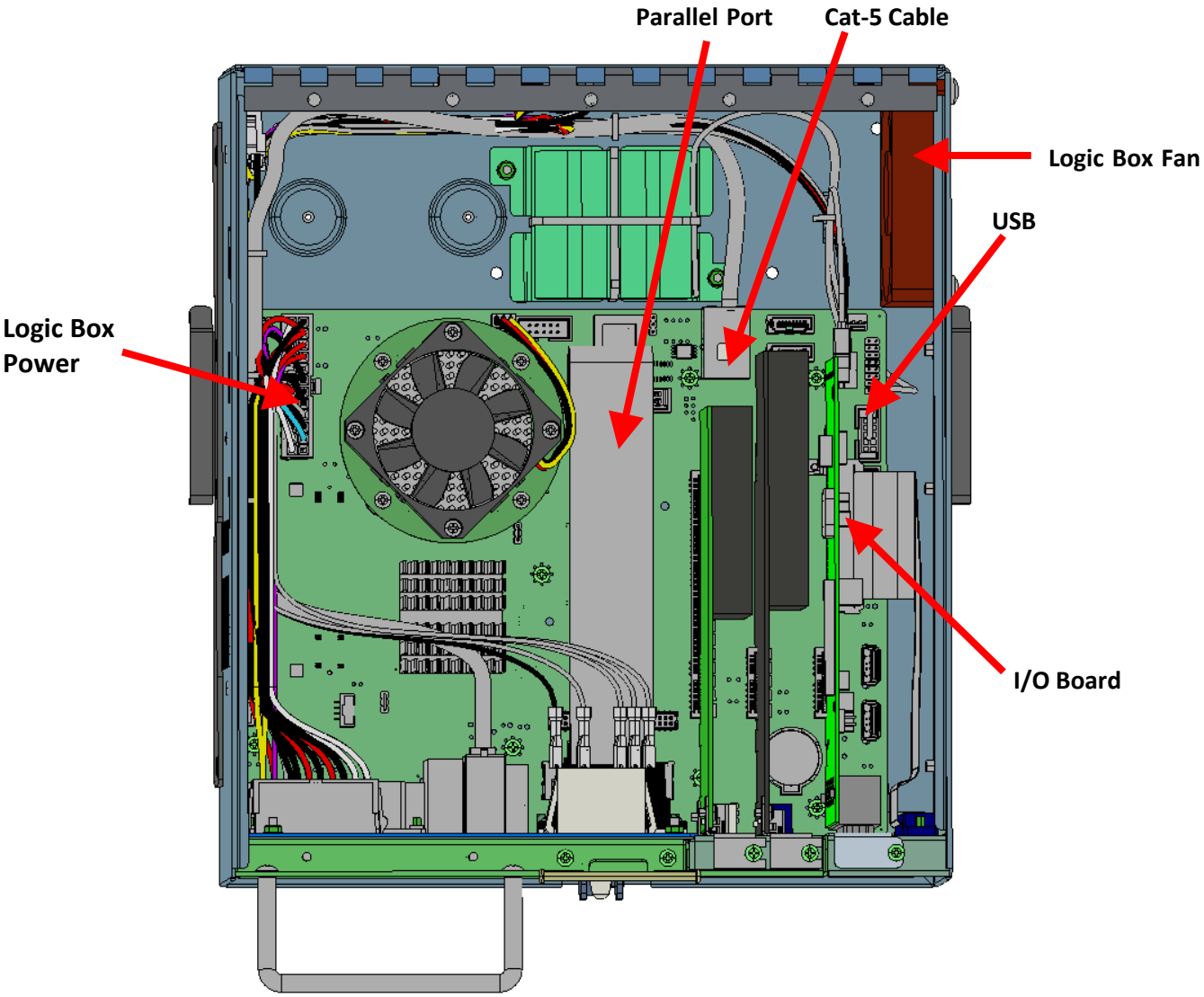

Figure 33 – Harnesses

2. Remove two #1 screws from the video card and from the I/O board.

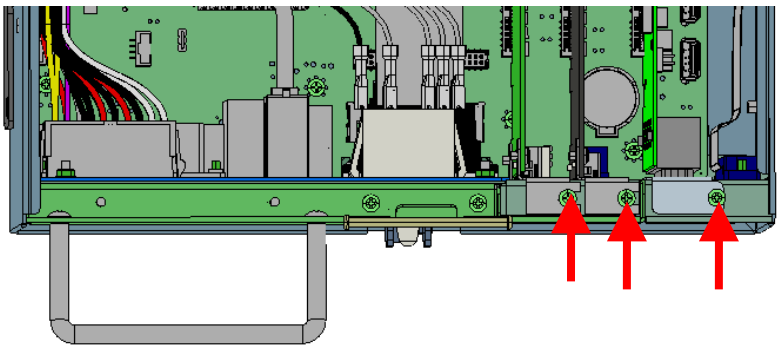

Figure 34 – Video card and I/O Board Screw Location

3. Remove the video card, the PCIe Express I/O board, and 78 pin connector.

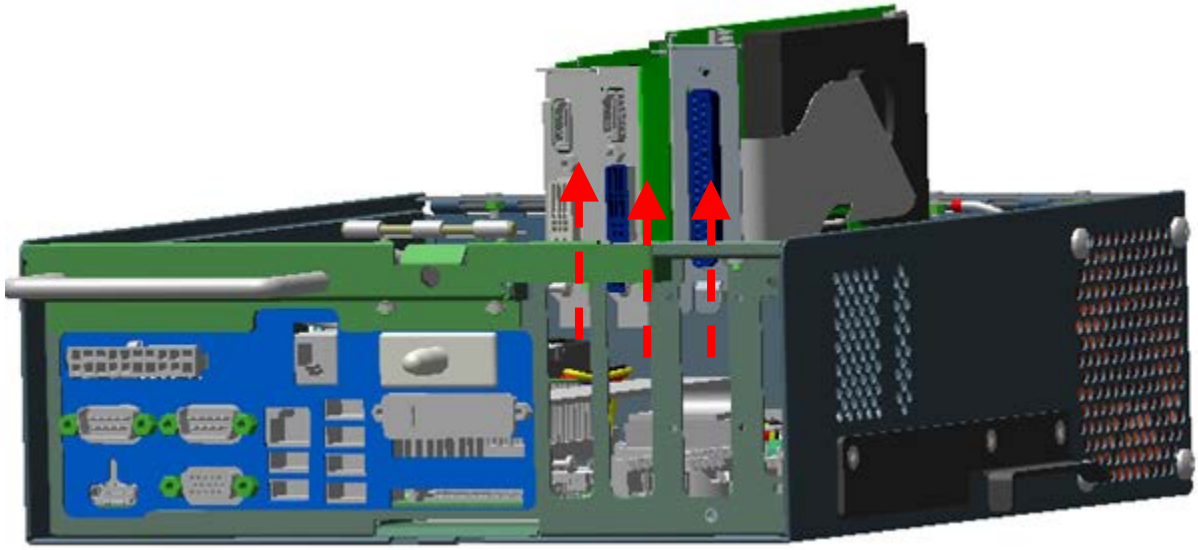

Figure 35 - PCI Express I/O Board and Video Card

4. Remove the eight #1 screws that secure the main logic board to the logic box.

5. Remove the two securing M3 (5.5mm) nuts from the I/O plate and remove the logic board.

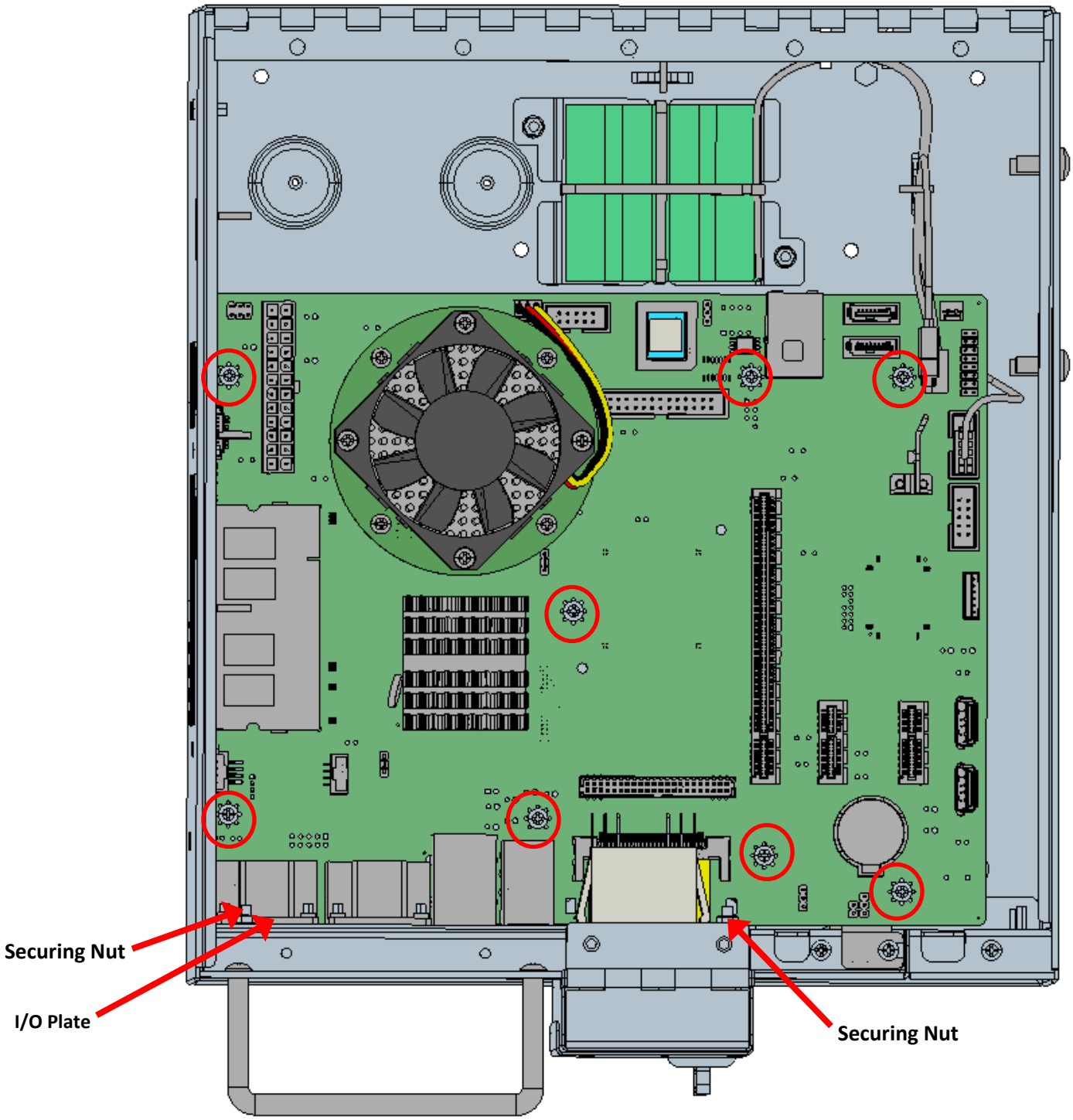

Figure 36 - Screw & Nut Location

2.4.4. PCIe I/O Board

The PCIe I/O board is a PCIe x1 half height card that provides the following functions & features:

- Non-volatile memory
- RS-232, RS-485 and open collector serial ports for peripherals
- Door and Battery Monitoring
- Hard and Soft Meter interface
- Auxiliary I/O
- Player Button Interface, Key switches (Audit, Technician)

The card plugs into a standard PCIe x1 slot, a separate USB link to the card is connected from main logic board to PCIe I/O board. The I/O board stores critical information in 16Mb of Non-Volatile RAM (NVRAM). The NVRAM is divided into two 8Mb banks. NVRAM does not contain ANY game content such as graphics, sound, or the operating system.

The information stored in NVRAM consists of:

- User-defined configuration such as the volume settings and communication configurations.
- Financial reporting since the last RAM clear.
- Game history since the last RAM clear.
- System Errors.

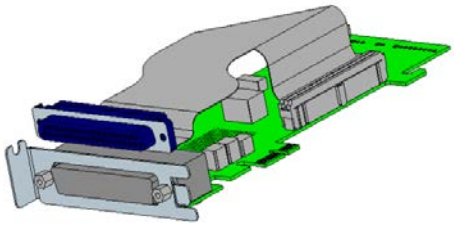

Figure 37 - PCIe I/O Board

2.4.5. Video Card

The COAM is equipped with the NVIDIA GeForce GT 740 PCIex16 Dual Slot (HDMI/DVI-I, DVI-D) video card for optimum performance.

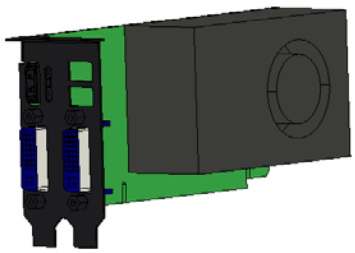

Figure 38 – NVIDIA GT 740 Video Card

2.4.6. Main Logic Board

WARNING: The circuit boards housed inside the logic box contain static-sensitive components. Take all necessary precautions against ESD. Always power off the COAM before servicing the logic box or any of its components.

The sensys EP™ main logic board contains an Intel Core™ 2 Duo Mobile Processor, 2 x 2GB DDR2/667MHz/ 200 pin SODIMM system RAM, video hardware, and several communication ports. This high-performance board is responsible for running the game software, as well as controlling the operation of the COAM. The board has one slot for a compact flash card, which is used to store the COAM's software.

Details of the main logic board are listed below:

BIOS - The main logic board includes the BIOS to support all of the main logic board functionality. The BIOS IC is in a socket, and can be protected from being overwritten. The write protect version is a stuffing option on the logic board. An 8Mbit or 16Mbit firmware hub is required.

CMOS Battery Backup -The main logic board CMOS setting defaults are factory set so as to not require the back-up battery to be installed. The battery, when installed, is designed to last a minimum of 8 years when the COAM is turned off. COAM "ON" hours extend battery life.

Thermal control - Board contains two temperature sensors and two fan control interfaces. The fan controls monitor tachometer and have PWM control for CPU fan and logic box fan.

System RAM – The COAM utilizes two system RAM modules. One module is located on the top side of the main logic board and the other is on the bottom.

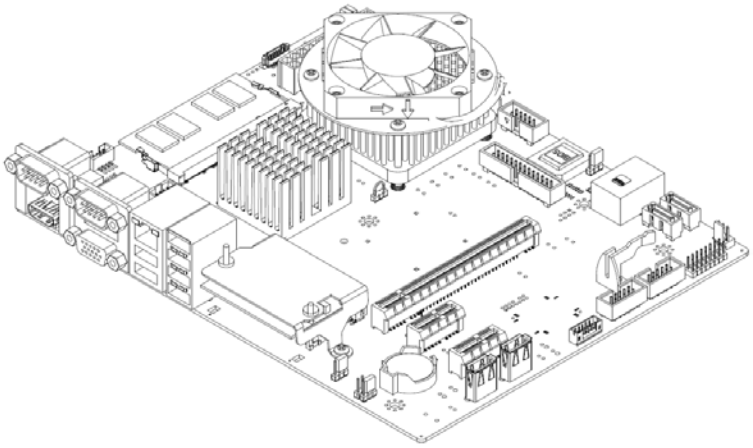

Figure 39 - Main Logic Board

2.4.7. Compact Flash Cards

The logic box contains one Compact Flash card (CF card), in the main (lower) slot of the logic box, which contains the operating system and games.

2.4.8. Batteries

The I/O board connects to a four AA rechargeable battery pack. This is to ensure that the integrity of its memory is not lost or compromised in the event of a power failure or powering off the machine. The battery backup also allows the COAM to continue to monitor all door accesses when the COAM has lost all power (even during a power disconnect).

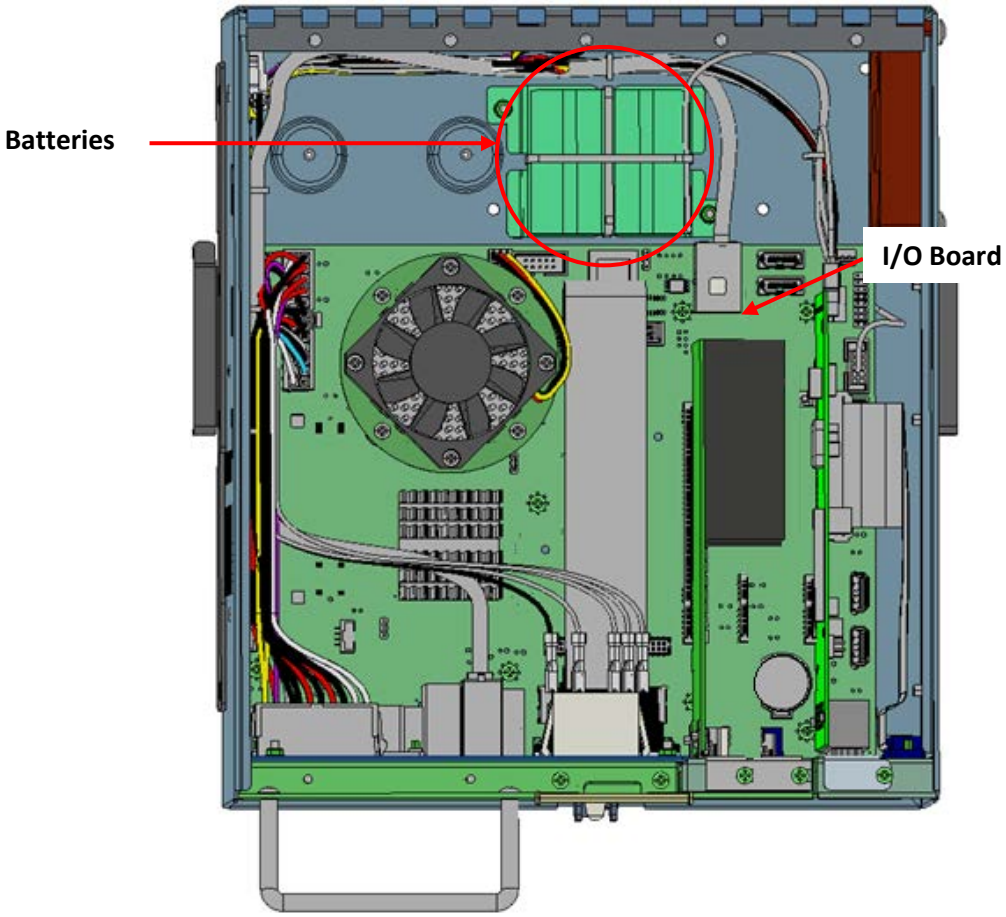

Figure 40 - Batteries

NOTE: Use IGT approved batteries only.

2.5. Peripheral Board

The peripheral board contains connectors (P) and fuses (F) that interface with peripherals, doors, meters, and keys.

2.5.1. Peripheral Board Connectors

F100	Numerous Devices and Peripherals, USB Button Board +5VDC, SLO-BLO 5.0A/250V	P200	Mechanical Meters Power (+12VDC), Fledge Board signals
F102	Main LCD, USB Button Board +12VDC, SLO-BLO 5.0A/250V	P201	COM (RS-485)
F103	Top LCD, Belly lights, Meter Board +12VDC, SLO-BLO 5.0A/250V	P202	Candle (not used)
F104	Fans, Buttons/Lamps, Audio Amplifiers +12VDC, SLO-BLO 5.0A/250V	P203	Tech & Audit Keys
F105	Marquee Board (Frame light board) +12VDC, SLO-BLO 5.0A/250V	P206	COM (SAS/RS-232)
F107	Bill Validator +24VDC, SLO-BLO 4.0A/250V	P210	COM(RS-232)
P100	Power Supply (450 watt) +5V/+12V/+3.3V/+24V/-12V/+5VSB	P211	Main Door & Top Door Switches (in series)
P101	DB37 Connector	P215	Cabinet Fan (+12VDC)
P102	DB78 Connector	P218	Jumper Harness (Only when logic door enclosure is **not** present)
P103	Service LED	P219	Bill Validator Power (+24VDC) and Comms
P104	Main LCD Power (+12VDC)	P301	Fledge Board Power (+5VDC)
P105	USB Button Board Power (+5/+12VDC)	P305	Bill Validator
P106	Not used	P400	Main Speakers
P107	Top LCD Power (+12VDC)	P401	Audio In
P109	ON/OFF Switch	P402	Top Speakers
P112	Marquee Control Board Power (+12VDC)		

Table 6 – Peripheral Board Connectors

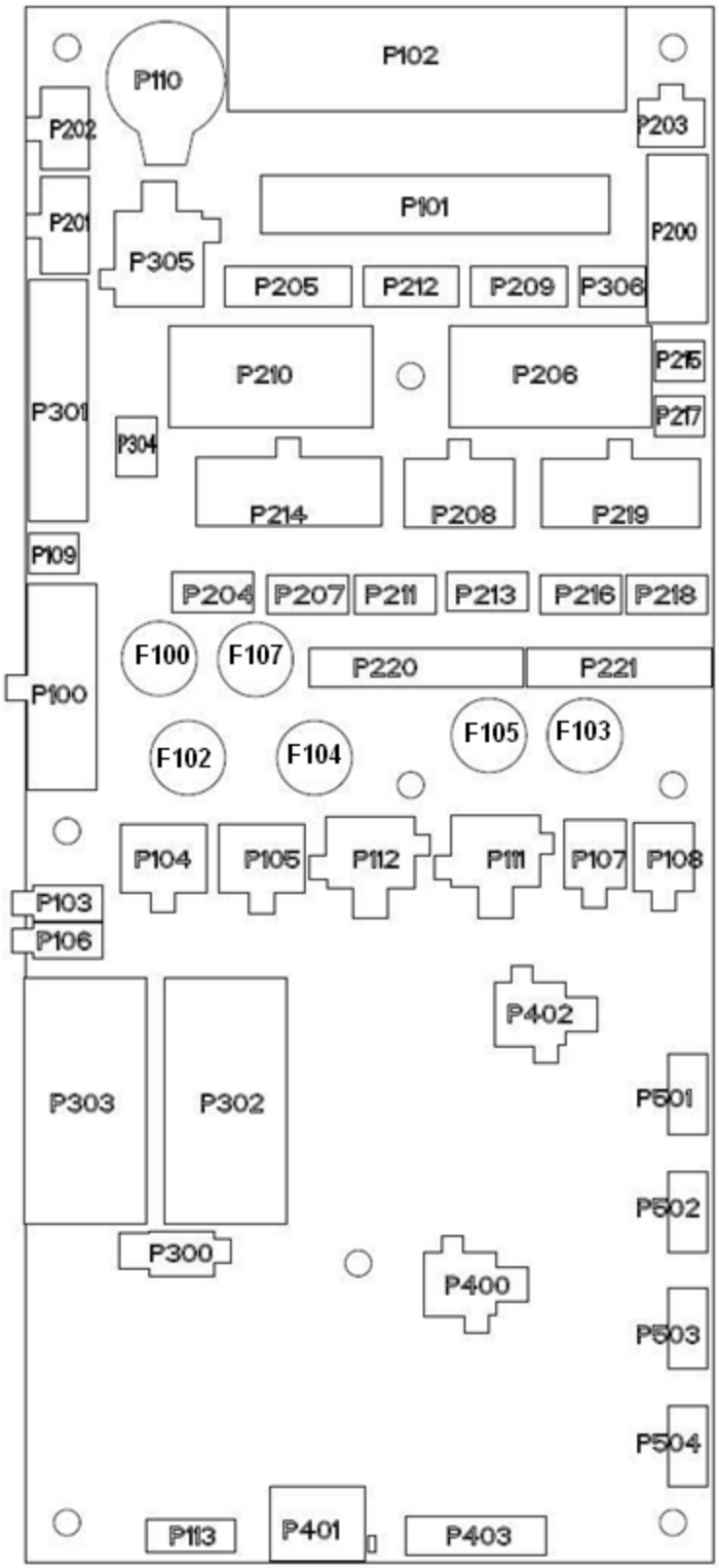

Figure 41 - Peripheral Board

2.5.2. Peripheral Board Removal

Tools Required:

- 1 x #1 Phillips Screwdriver

1. Open the main door and power OFF the prodiGi Vu.
2. Disconnect all connectors from the peripheral board.
3. Remove the nine #1 screws and remove the peripheral board.

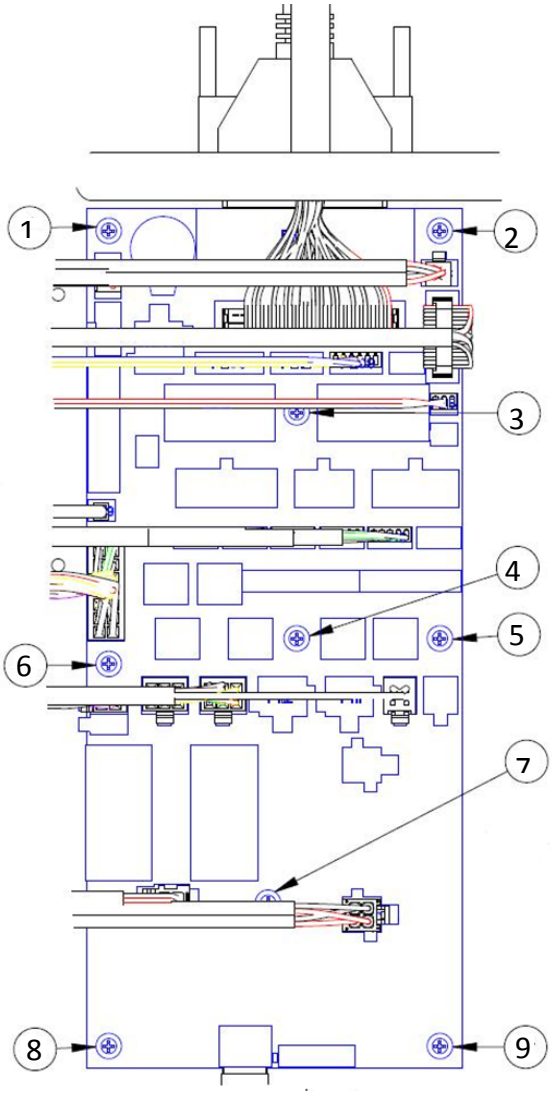

Figure 42- Peripheral Board Screw Location

2.6. Fledge Board

The fledge board is used to link all COAMs (at a site) to a site controller where accounting is done and winning tickets are printed.

The fledge board requires +5VDC and is powered by the peripheral board.

Connector	Part Number	Connects to
A	2418211 (4 Pin)	6-pin connector to peripheral board (+5VDC & GND)
	2418211 (8 Pin)	9-pin connector to peripheral board (Coin3 & Coin_err which are Credit Ret and Remote Clt at the fledge board)
B	2418210 (6 Pin)	15-pin connector to peripheral board (meter1 & meter2 signals which are coin in and coin out at the fledge board)

Table 7 – Fledge Board Connectors

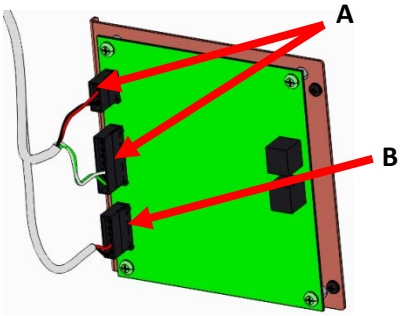

Figure 43 – Fledge Board

2.6.1. Fledge Board Removal

WARNING: The circuit board contains static-sensitive components. Take all necessary precautions against ESD. Ensure to always power off the prodiGi Vu before servicing the logic box or any of its components.

Tools Required:

- 1 x #2 Phillips screwdriver

1. Open the main door and power OFF of the prodiGi Vu.
2. Disconnect the connectors to the fledge board.
3. Remove the four screws to remove the board from the bracket.

2.7. USB Button Board

The USB button board has two main functions. It is responsible for managing a matrix of player buttons and powering the belly lights. The USB button board communicates with the logic box through a USB interface. When a button is pressed, a microcontroller on the USB button board transmits this information to the main logic board. The main logic board acknowledges the command and instructs the USB button board to turn the button lamps on or off.

2.7.1. USB Button Board Connectors

There may be different configurations available on the prodiGi Vu (number of player buttons). Below are the descriptions of all the used connectors on the USB button board:

J2	USB connector to the logic box
J3	Supplies +12VDC and +5VDC to the board • +12VDC is used to power the board and button lamps • +5VDC is used to power the high-power LED lamps in the belly door
J6	Connects to the left belly light
J7	Connects to the center belly light
J8	Connects to the right belly light
P200	Connects to left Play button
P201	Connects to Bet, Max Bet, and right Play button
P205	Connects to Cashout button

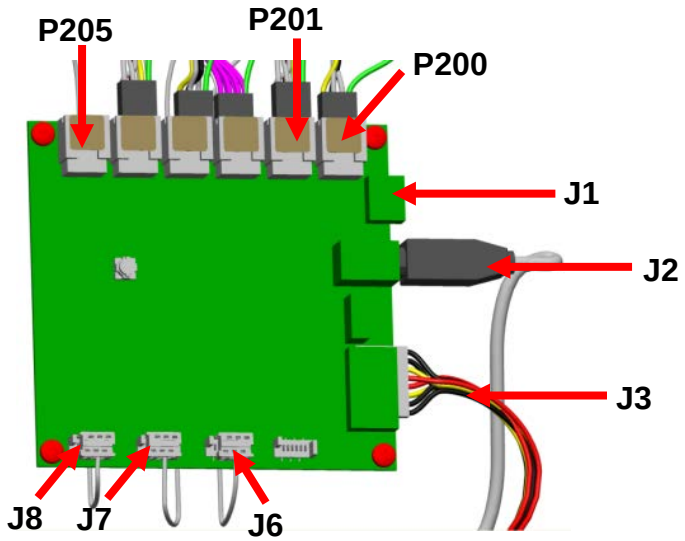

Figure 44 – USB Button Board

2.7.2. USB Button Board Removal

<u>WARNING:</u> The USB button board contains static sensitive components. Take all necessary precautions against ESD. Ensure power is off before serving this component.

<u>Tools Required:</u>

- 1 x #1 Phillips Screwdriver

1. Open the main door and power OFF the prodiGi Vu.
2. Remove four screws from the Belly Door. The door will swing open.
3. Remove the four #1 screws from the USB button board cover.
4. Disconnect all harnesses from the USB button board.
5. Remove the four #1 Phillips screws holding the board in place.

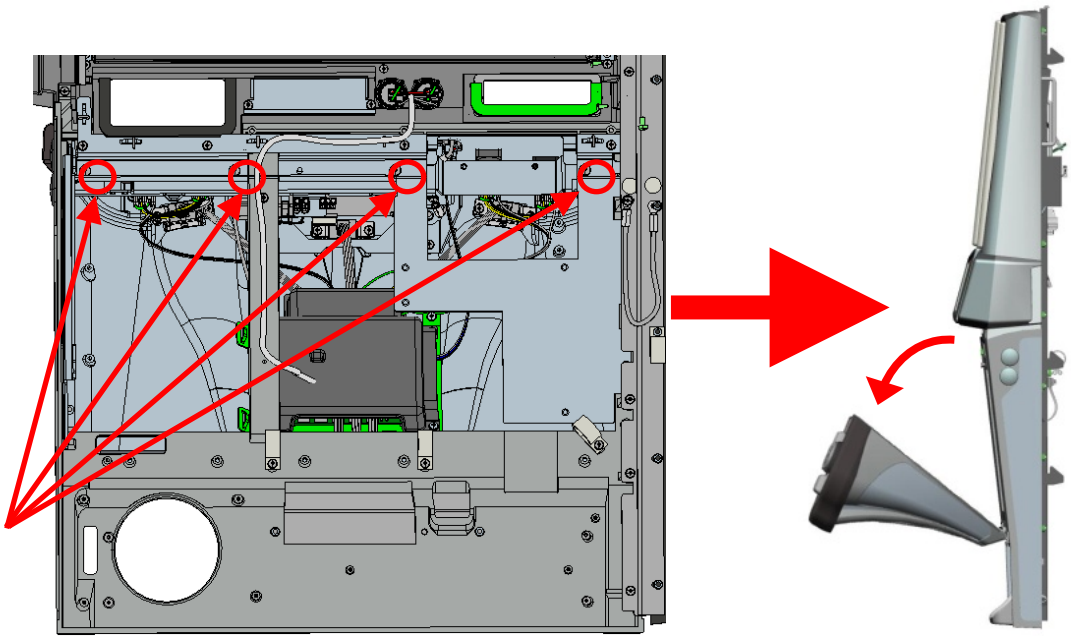

Figure 45 – Accessing the USB Button Board

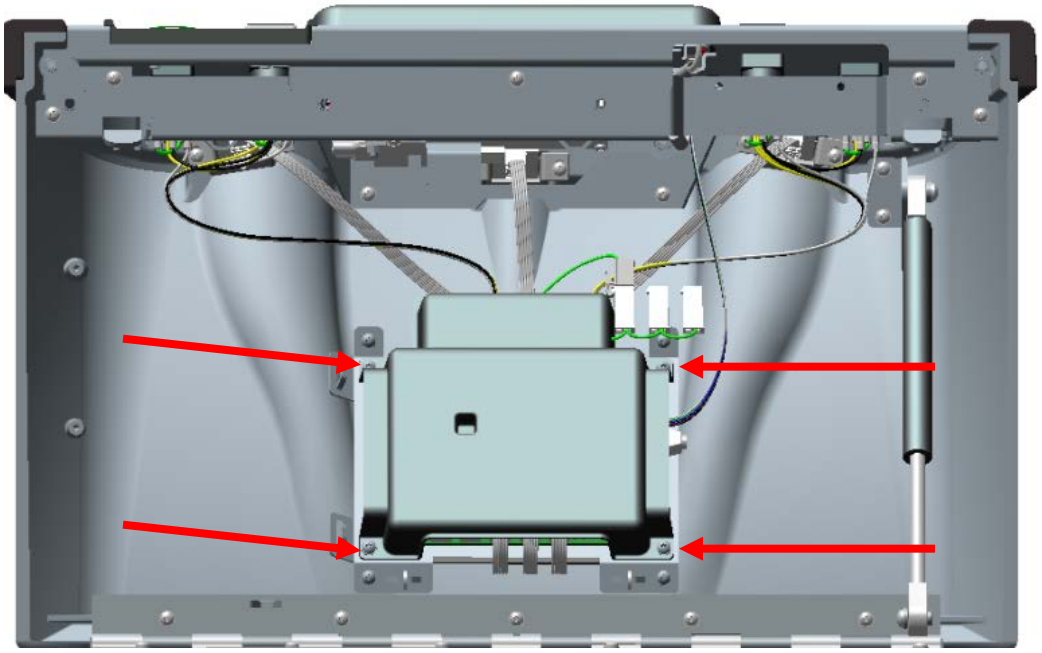

Figure 46 - USB Button Board Cover Removal

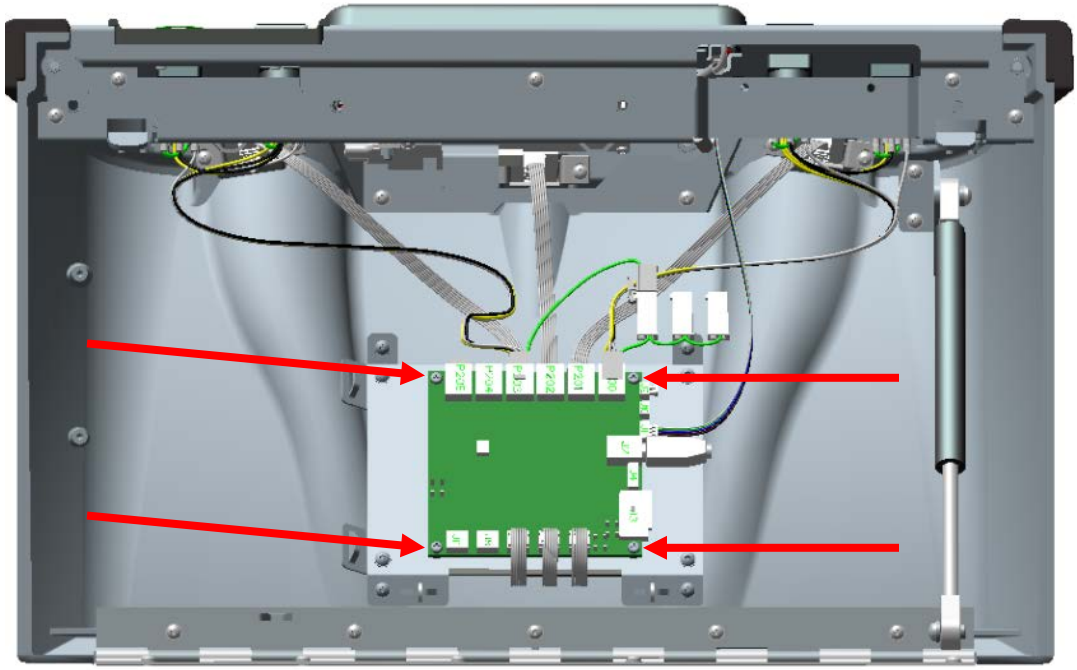

Figure 47 – USB Button Board Removal

2.8. Button Panel and Buttons

The terminal is equipped with a button panel, containing mechanical buttons. Each button's function is indicated by the text insert in the button assembly. An LED is used to illuminate each button. Every button uses a micro switch (located inside the lamp holder) to activate the function of the button.

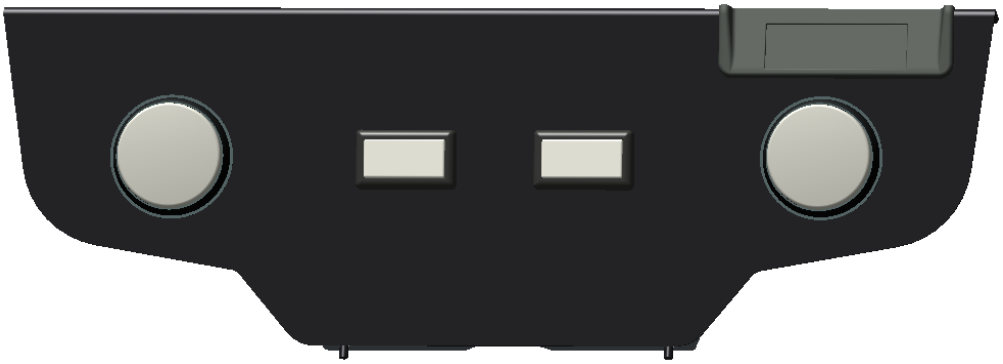

Figure 48 – Button Panel (Front View)

2.8.1. Button Panel Connectors

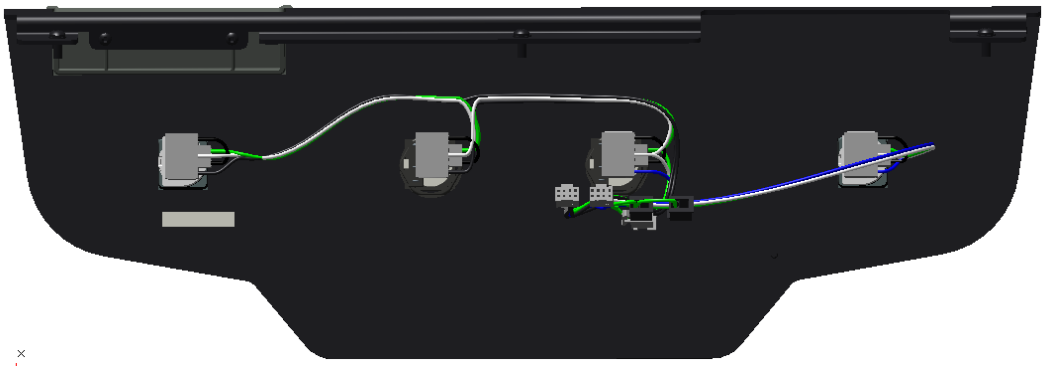

Figure 49 – Button Panel Connectors (Back View)

The COAM can be equipped with either digital or mechanical buttons, or both. Each button's function is indicated by the text insert in the button assembly. An LED is used to illuminate each button. Every button uses a micro switch (located inside the lamp holder) to activate the function of the button.

2.8.2. Mechanical Button Removal

1. Open the main door and power OFF the prodiGi Vu.

2. Grasp the lamp holder. While gently rocking the lamp holder back and forth, pull it out of the bottom of the button bezel.

3. To reinstall, ensure that the prongs align with their corresponding holes and push the lamp holder back into the bottom of the bezel until it is properly seated.

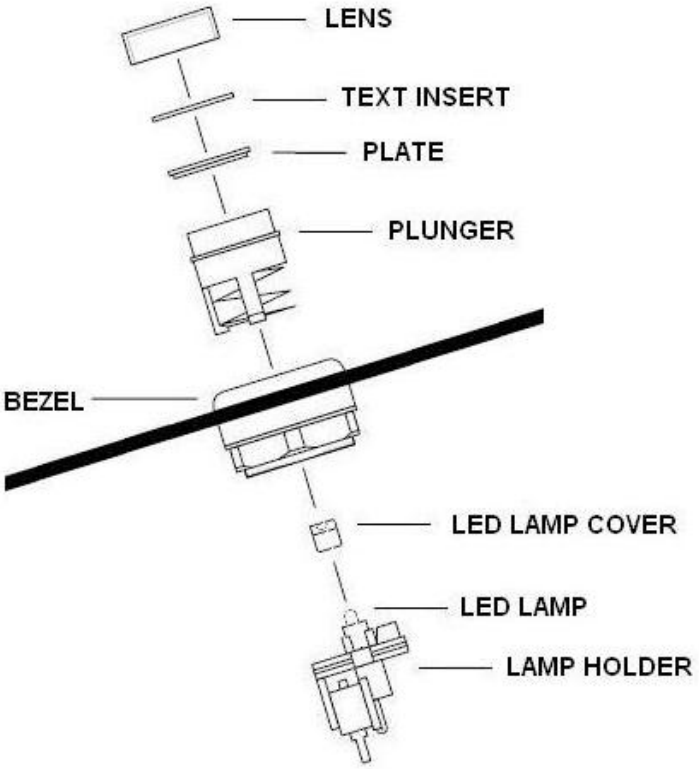

Figure 50 - Button Assemblies

2.8.3. Button Panel Removal

Tools Required:

- 1 x #2 Phillips Screwdriver
- 1 x 11/32 Nut Driver

1. Power OFF the prodiGi Vu, and open the belly door.
2. Disconnect the connections to the USB button board.
3. Remove the four screws. Remove the three 11/32” nuts.
4. Pull out the assembly.

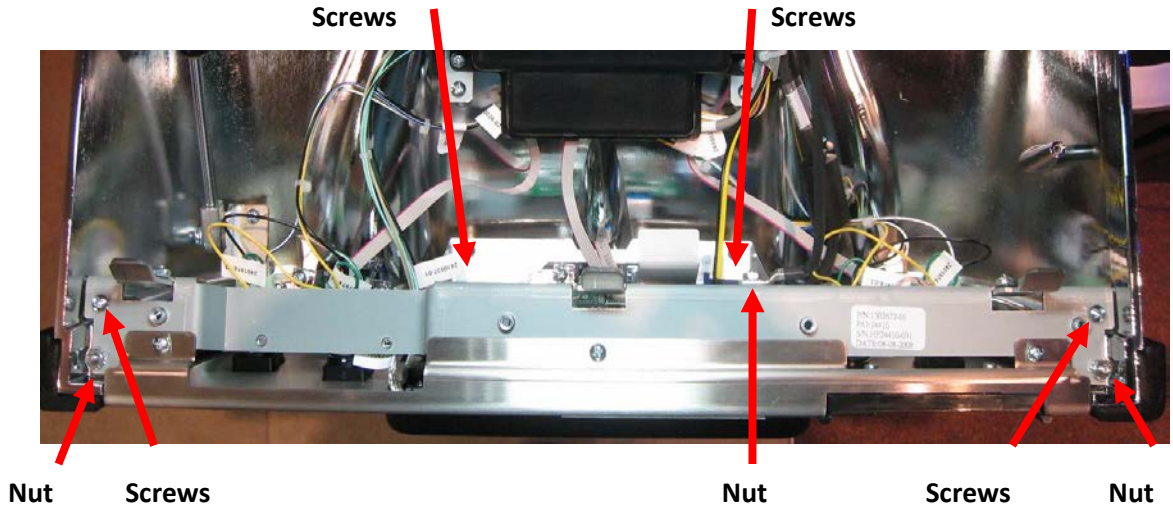

Figure 51 – Button Panel Removal

2.9. Marquee Board & Bezels

The prodiGi Vu is equipped with marquee bezels, for the main and secondary LCD monitors. These bezels are on each side of the LCD monitors are used for lighting effects. These lighting effects are controlled by the game, and may be used to attract players or to celebrate wins or other special features in the game. The design of the marquee bezel allows a game to produce a virtually unlimited variety of colors and lighting patterns.

There are two components to the marquee bezel:

- A matrix of bright RGB LED lamps contained within a translucent plastic bezel
- An LED controller board that controls the LED matrix

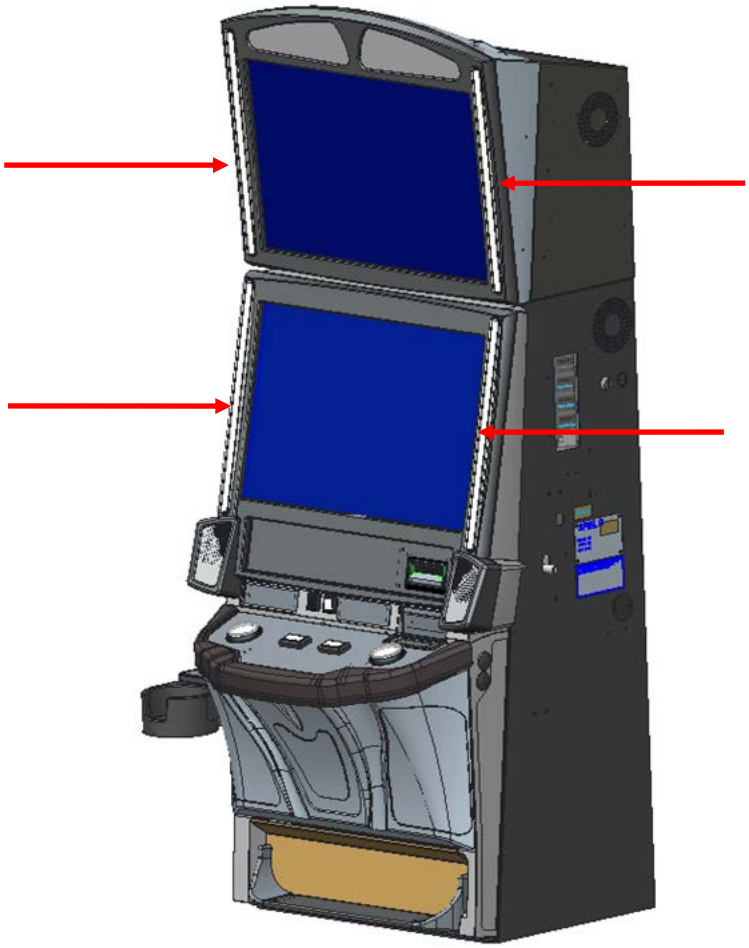

Figure 52 – Marquee Bezels

2.9.1. Marquee Controller Board

The top and main bezels of the prodiGi Vu house the LED strips that are controlled by the marquee control board. These LED strips are connected to the marquee control board via ribbon cables.

Each LED strip requires one large control ribbon cable.

In the event of failure of the LED strips, it is recommended that the entire bezel is replaced and not disassembled in the field.

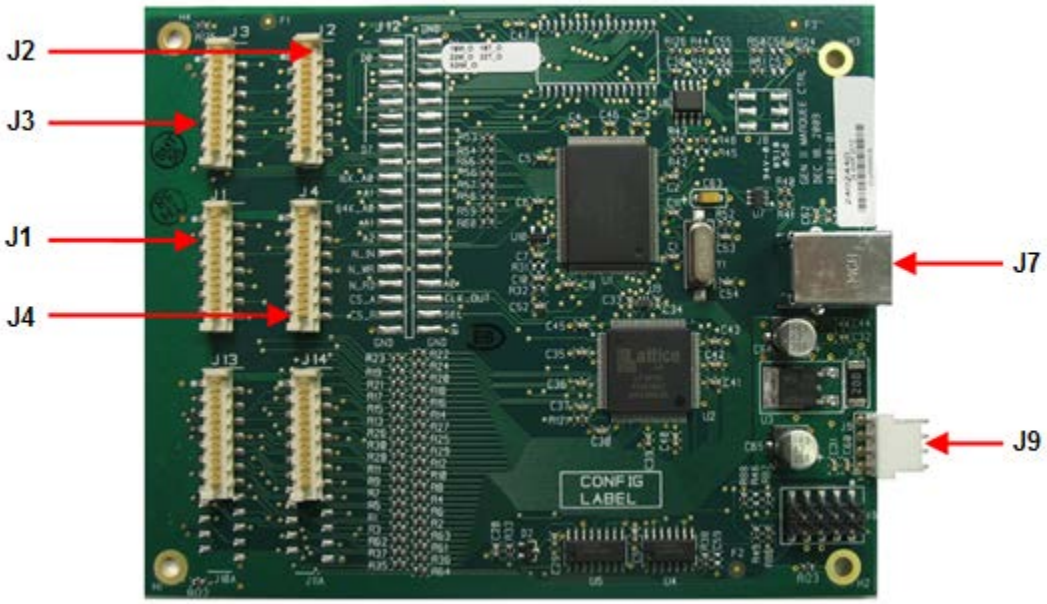

Figure 53 - Marquee Controller Board

Marquee Controller Connector Reference Designator	Function
J1	Control for bottom right LED strip
J2	Control for top left LED strip
J3	Control for top right LED strip
J4	Control for bottom left LED strip
J7	USB connection to the Logic Box
J9	+12VDC from the Peripheral Board

Table 8 - Marquee Controller Board Connection Details

2.9.2. Marquee Control Board Removal

WARNING: The marquee control board contains static-sensitive components. Take all necessary precautions against ESD. Always power OFF the EGM before servicing the logic box or any of its components.

Tools Required:

- 1 x #1 Phillips screwdriver

1. Open the main door and the top door, then power off the prodiGi Vu.
2. Remove the four screws holding the marquee control board to the cabinet.
3. Disconnect the following connectors:
    - Ribbon Cables
    - USB
    - Power

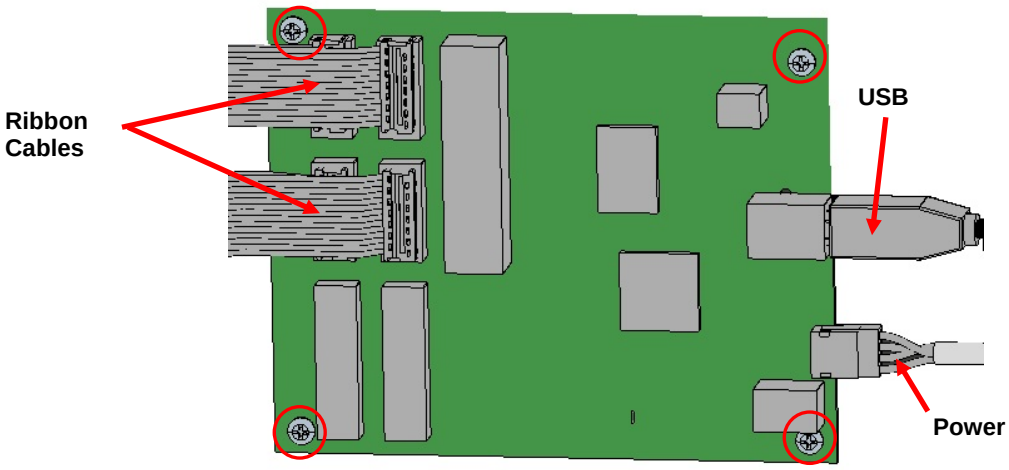

Figure 54 – Marquee Board Removal

2.9.3. Top Marquee Removal

Tools Required:

- 1 x #1 Phillips Screwdriver

1. Open the main door and the top door, then power OFF the prodiGi Vu.
2. Disconnect all connectors from the marquee control bezel.
3. Remove the two #1 screws holding the top marquee bracket to the bezel.
4. Disconnect the following connectors:
    a. Speaker connector
    b. Ground strap
    c. Two clips holding the ribbon cables
    d. Disconnect the two ribbon cables from LED strips
    e. Disconnect the two speaker connectors

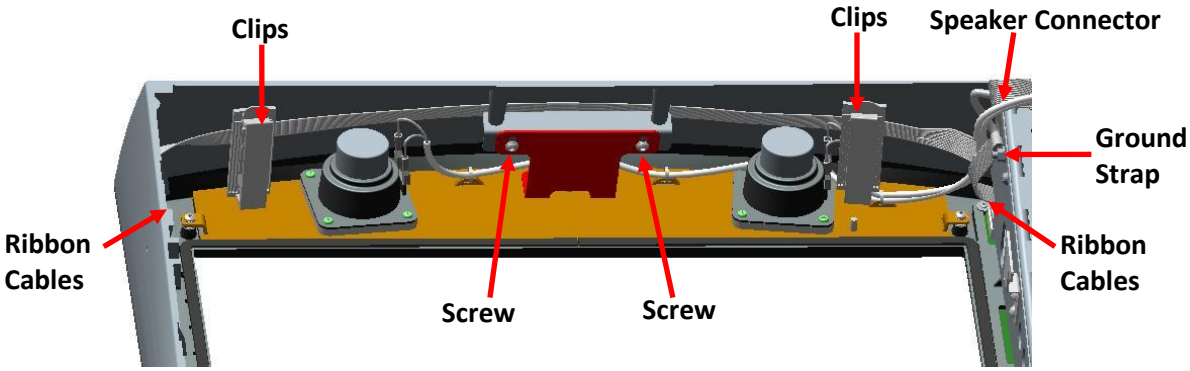

Figure 55 - Top Marquee Bracket

5. Remove eight #1 screws holding the bezel in place (viewed from inside)
    a. Two on the left bracket
    b. Two on the bottom of the door assembly
    c. Four on the right bracket (Two similar to the left bracket, two are holding the door stopper in place)

NOTE: Hold the bezel securely before removing the last screw to ensure it does not fall.

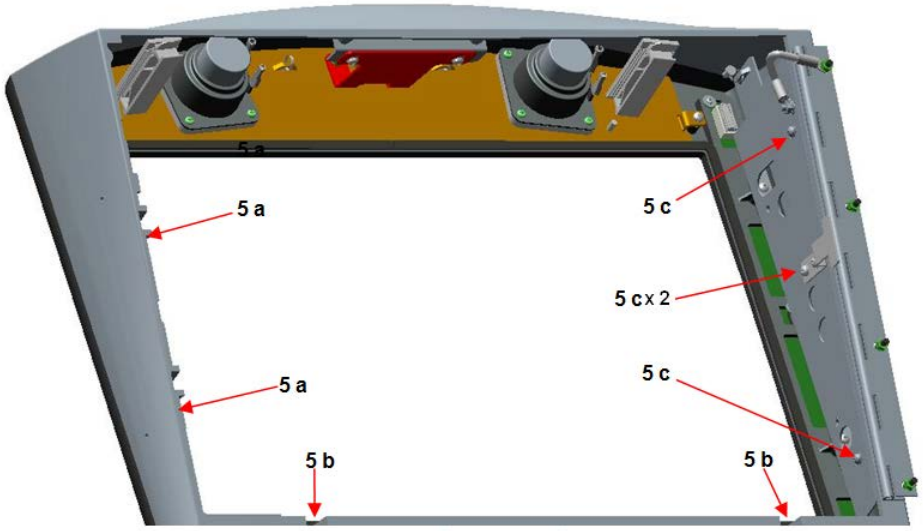

Figure 56 – Top Bezel Removal

6. Carefully remove the bezel from the top door assembly.

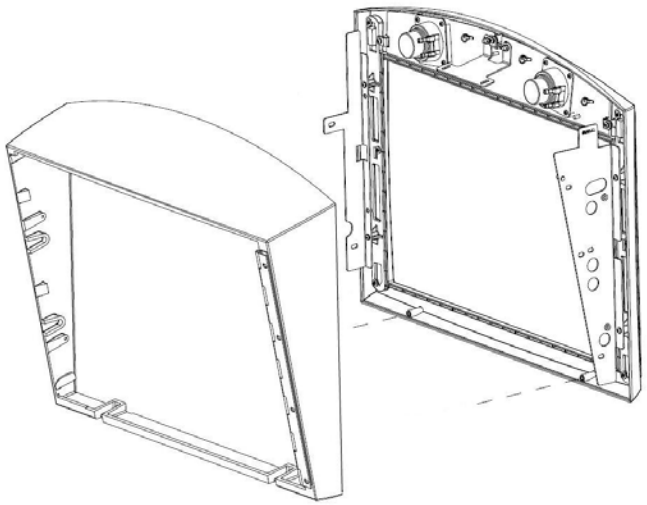

Figure 57 - Top Bezel Removal

2.9.4. Top LED Strip Removal

<u>WARNING</u>: Use caution when removing these components. The ribbon cable connections are FRAGILE.

<u>Tools Required:</u>

- 1 x #1 Phillips Screwdriver

1. Remove the top bezel assembly.

2. Remove the right and left mounting brackets, there are two #1 screws holding each bracket.

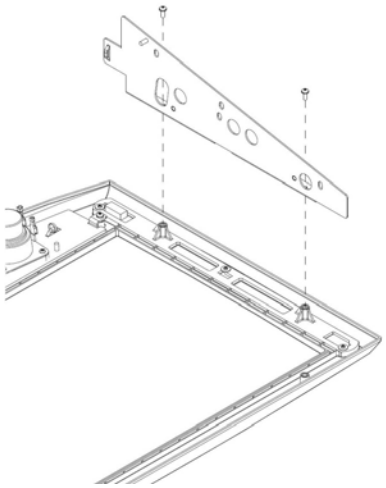

Figure 58 - Right Bracket

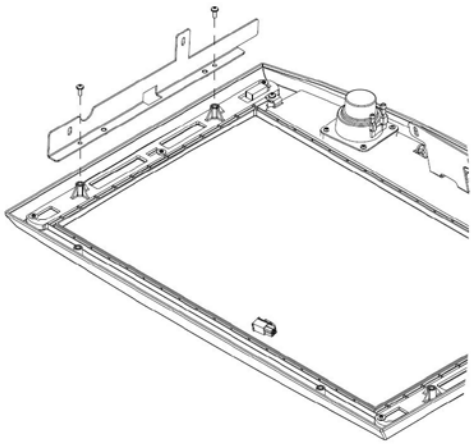

Figure 59 - Left Bracket

3. Remove the #1 screws holding the LED strips and covers to the bezel. There are three screws and washers per strip.

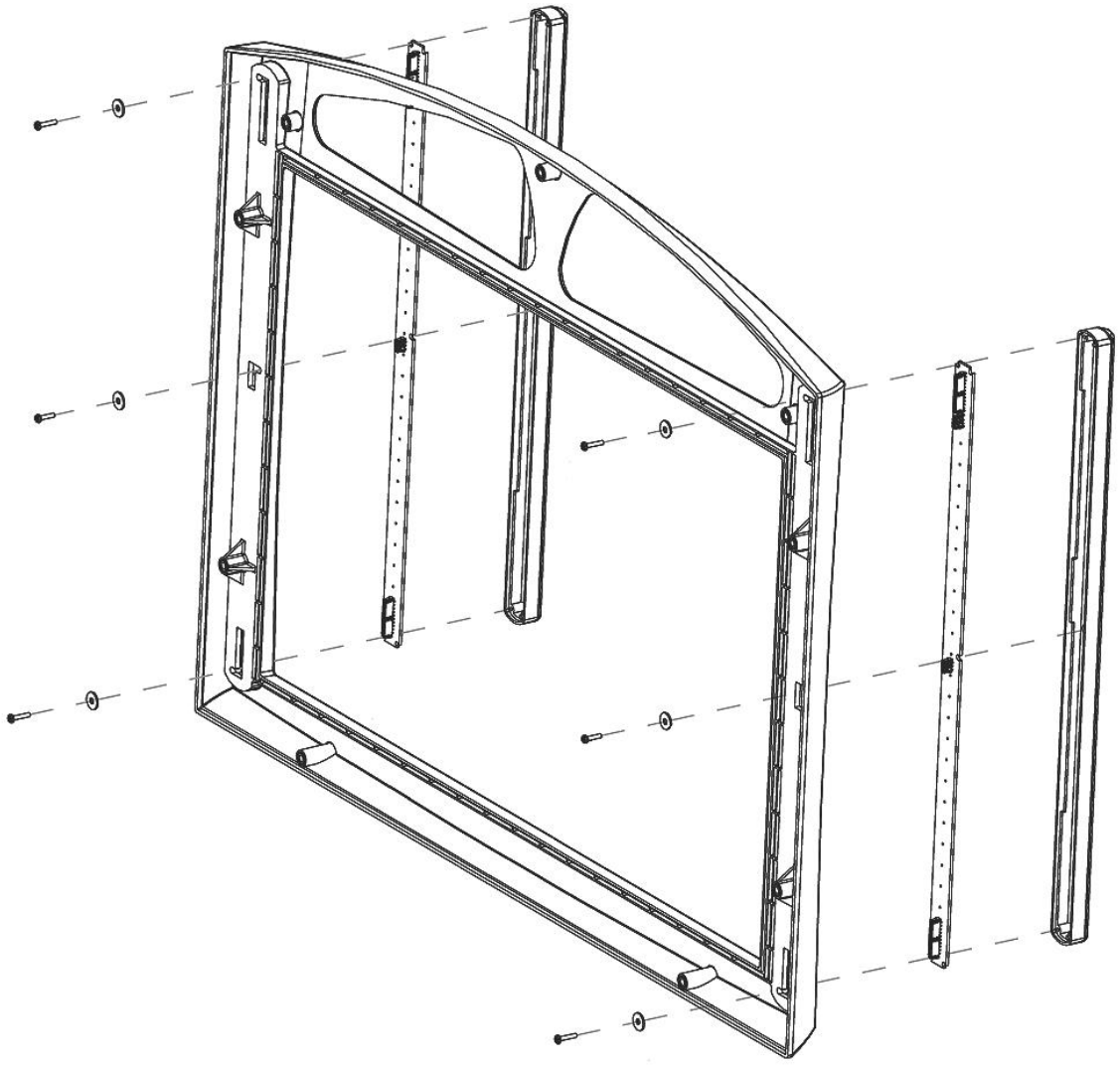

Figure 60 - Top Bezel Disassembly

2.9.5. Main Bezel Removal

<u>WARNING</u>: Use caution when removing these components. The ribbon cable connections are FRAGILE.

<u>Tools Required:</u>

- 1 x #1 Phillips Screwdriver

1. Open the main door and power OFF the prodiGi Vu.
2. Remove monitor.
3. Remove the screw connecting the retention bar to the terminal.

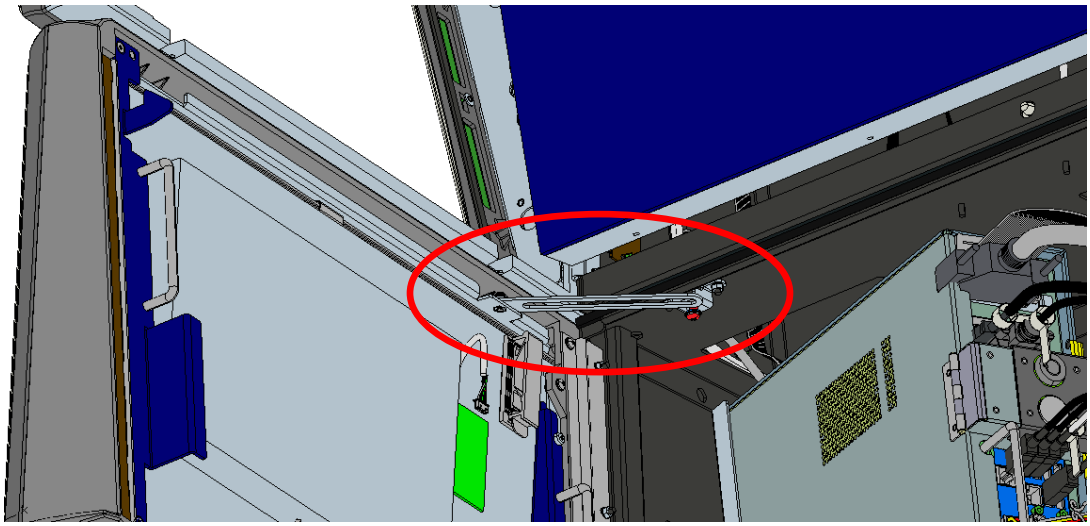

Figure 61 - Main Bezel Removal – Retention Bar

4. Remove eight #1 screws holding the bezel in place (inside view)
    a. Three on the right side
    b. Two on the left side
    c. Two on the top of the bezel inside the door frame
    d. One on the bottom, above the cash out and service buttons

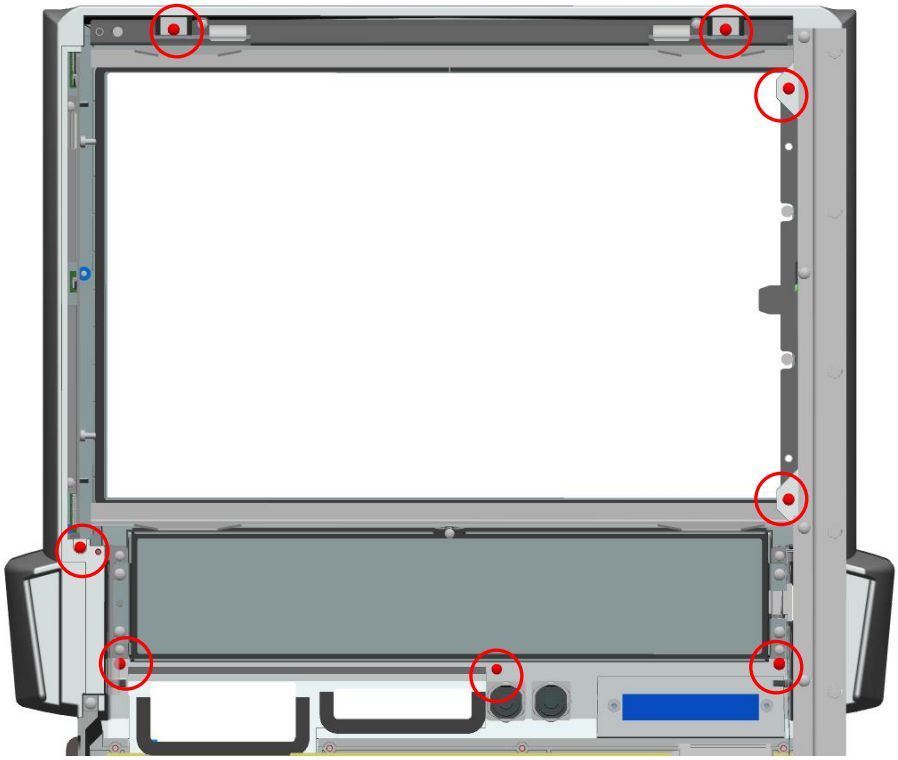

Figure 62 - Main Bezel Removal

5. Remove the ribbon cables from the marquee controller board.

6. Carefully remove the bezel from the main door assembly.

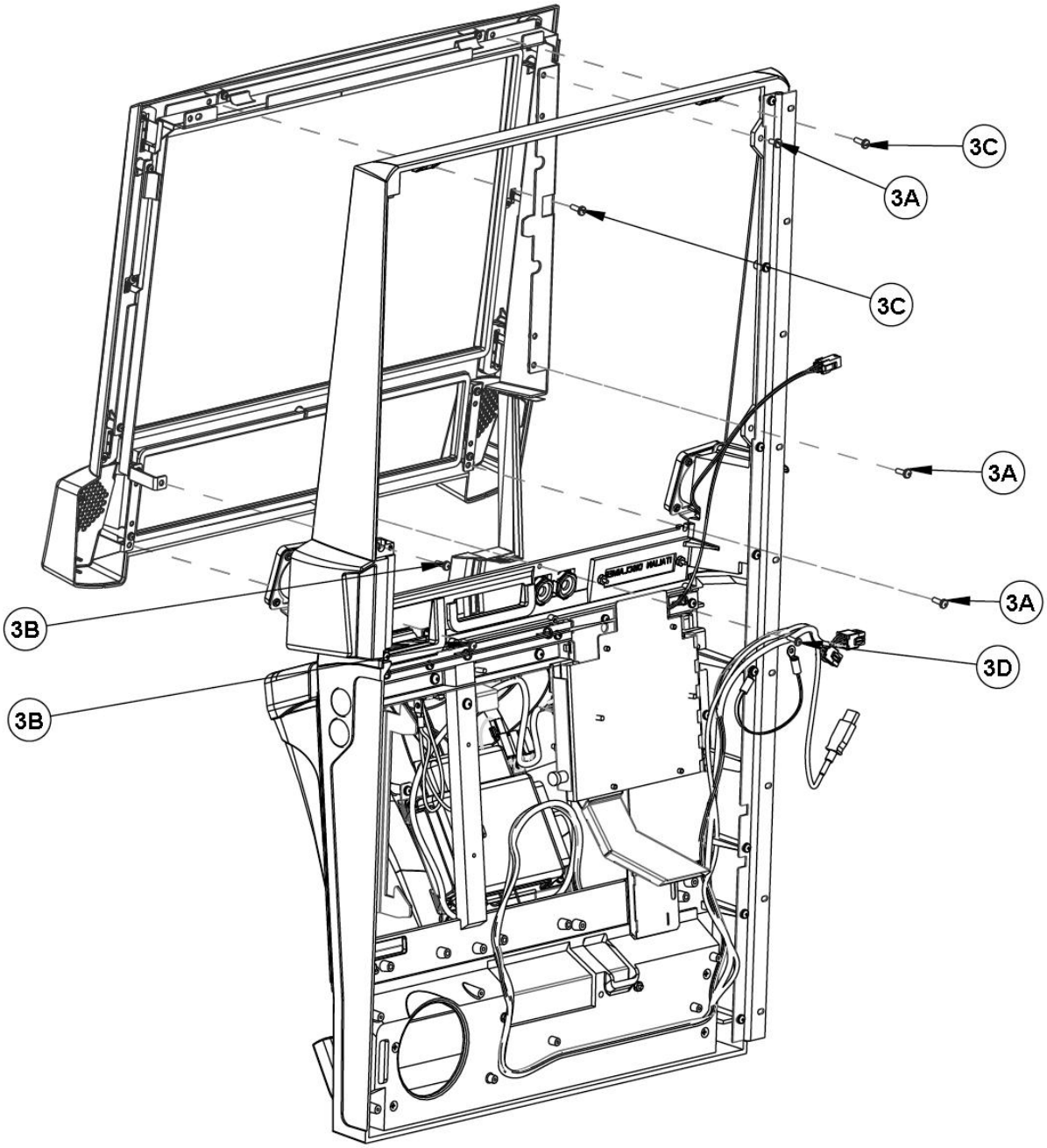

Figure 63 - Main Bezel Removal

2.9.6. Main Bezel Disassembly

<u>WARNING</u>: Use caution when removing these components. The ribbon cable connections are FRAGILE.

<u>Tools Required:</u>

- 1 x #1 Phillips Screwdriver

1. Remove the main bezel assembly.
2. Disconnect the ribbon cable from the LED strips.

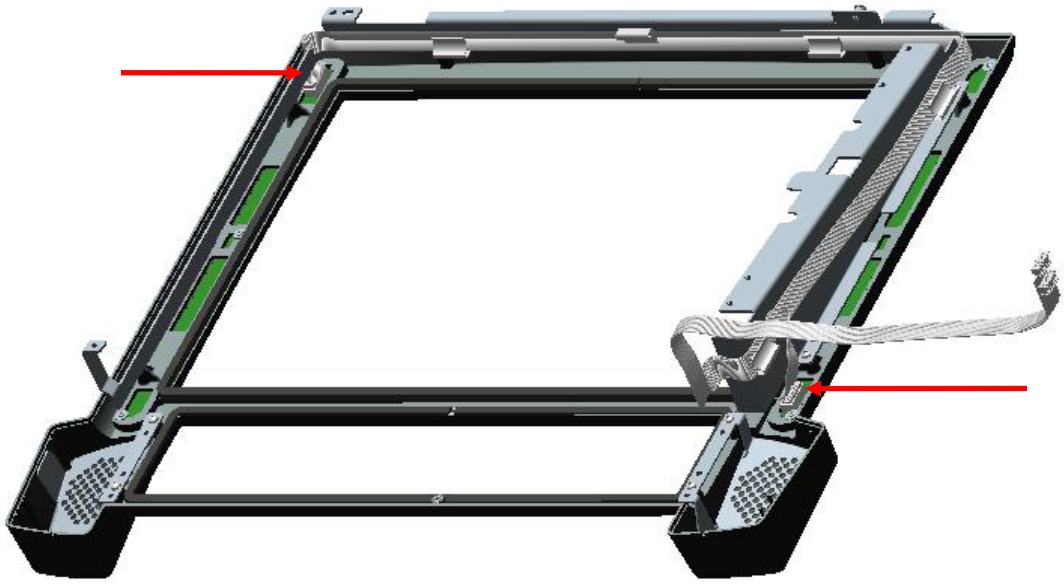

Figure 64 - Main Bezel Disassembly

3. Remove the mounting brackets, there are two #1 screws holding each bracket.

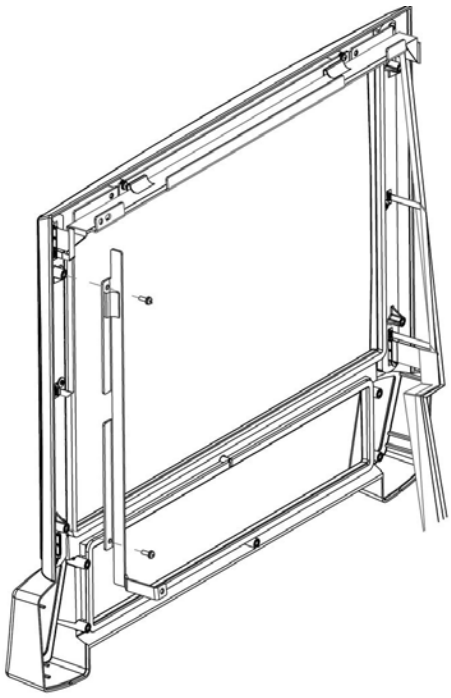

Figure 65 - Main Bezel Left Bracket

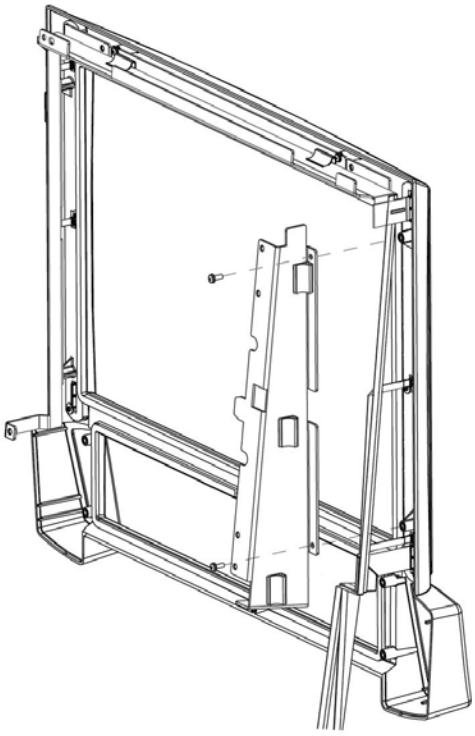

Figure 66 - Main Bezel Right Bracket

4. Remove the #1 screws holding the LED strips and covers to the bezel. There are three screws and washers per strip.

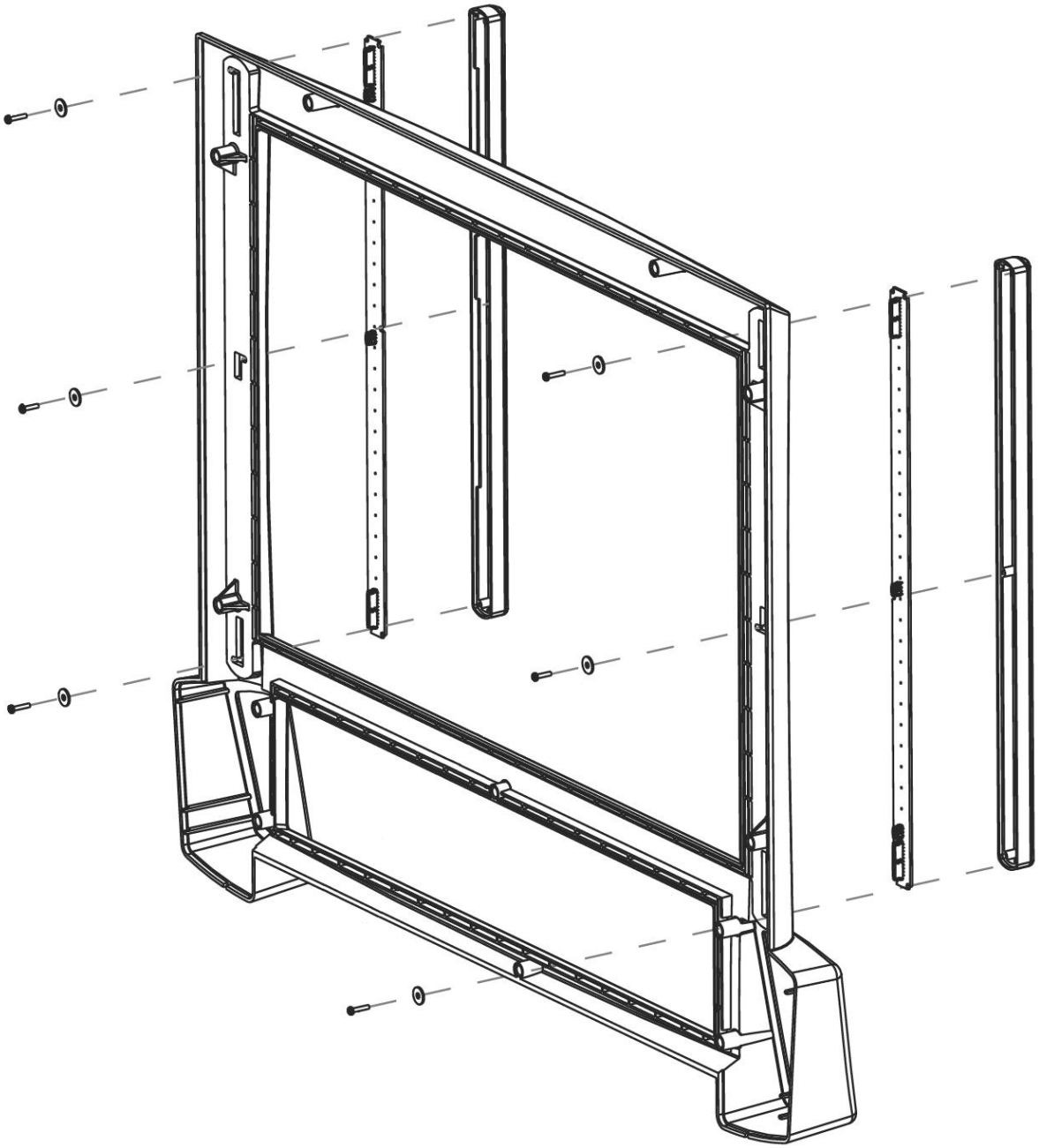

Figure 67 - LED Strip Removal

2.10. Mechanical Meters

The prodiGi Vu is equipped with mechanical meters. These meters record the lifetime financial records of the machines. The mechanical meters increment in one dollar denominations. If the electronic meters recorded by the software fail, the mechanical meters can identify the financial state of the machine by comparing the values to the last time the meters were read. The meters are not meant to be, nor should they ever be, reset to zero. They should always reflect the lifetime values.

The following are the meters and their functions:

- **Total Cash In (Advanced)**: Amount of money accepted by the COAM (inserted into the Bill Validator). This meter will increment every time money is accepted by the machine.

- **Total Cashout**: Amount of currency PAID to the players. This meter will increment every time a player CASHES OUT.

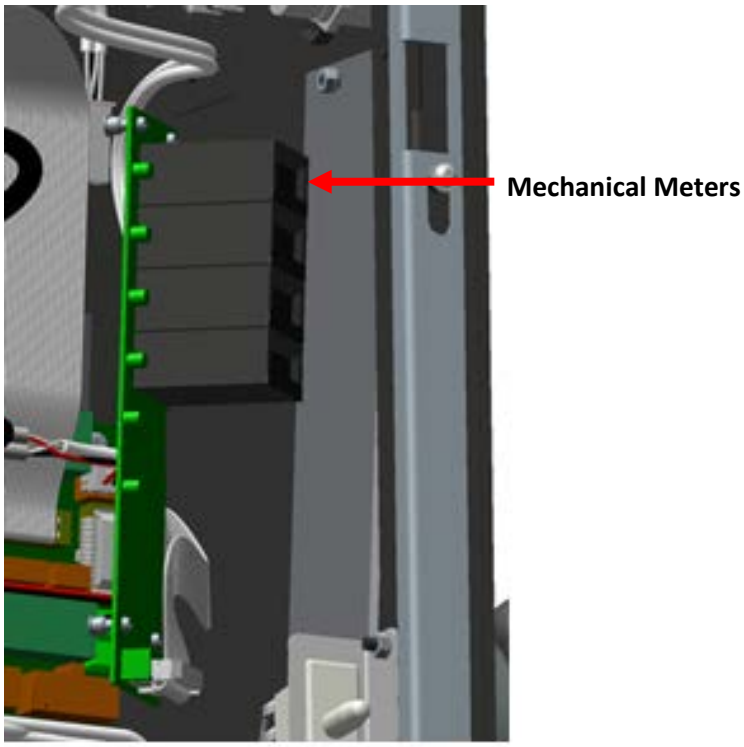

Figure 68 – Mechanical Meters (Meter Board Removed)

2.10.1. Mechanical Meter Removal

Tools Required:

- 1 x #1 Phillips screwdriver
- 1 x M4 (7mm) nut driver

1. Open the main door and turn OFF the prodiGi Vu.
2. Unlock the peripheral board enclosure door.
3. Remove two screws on the right hand wall of peripheral board enclosure.
4. Remove the side wall to access the mechanical meter.
5. Remove the nuts holding the mechanical meter to the wall.

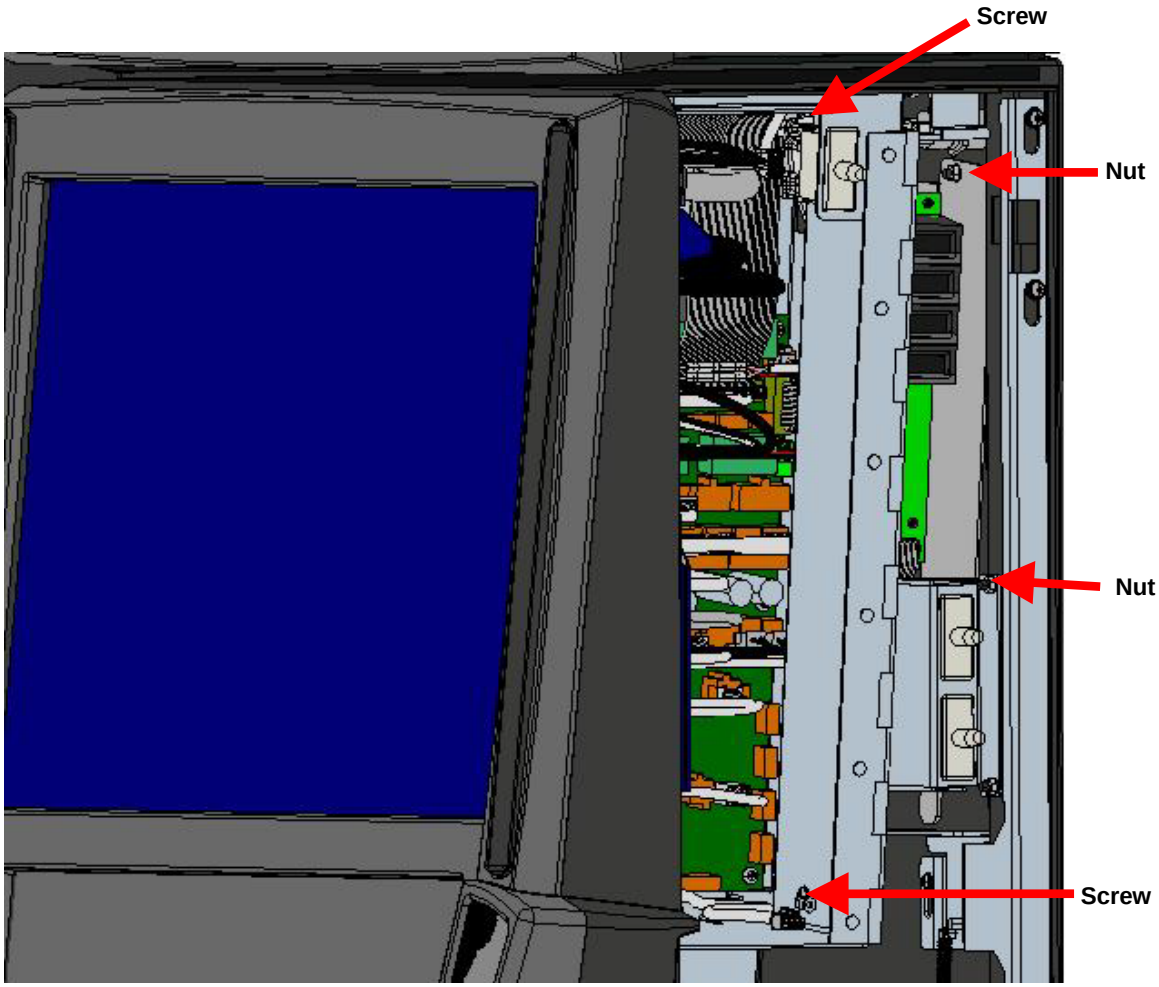

Figure 69 – Mechanical Meter Removal

2.11. Bill Validator Theory of Operation

1. The bill is read by the Bill Validator unit, which confirms the validity and the denomination of the inserted bill. If the illuminated bezel is blinking, the bill is not accepted.

2. If accepted, the Bill Validator transmits this information to the logic box.

3. The logic box acknowledges this communication and sends a command to the Bill Validator to send the bill to the stacker box. Once the bill is stacked the credits are added to the game.

4. The terminal can enter error conditions, if any failures or jams occur during these steps. Once the problem has been fixed, the terminal may need to be restarted or the user may need to enter and then exit the back office menus to clear the error message.

2.12. ICT TAO Bill Validator

The ICT TAO Bill Validator features a lockable bill box for high-security with acceptance rate up to 96% or greater.

Features:

- Four-way bill insertion
- Auto-calibrating
- Windows 7/XP/Vista and Linux compatible USB interface
- Secure, lockable, and removable bill box

Connects via non-isolated serial connection (NISR) and requires 12 VDC.

Figure 70 – ICT TAO Bill Validator

2.12.1. Bill Validator Components

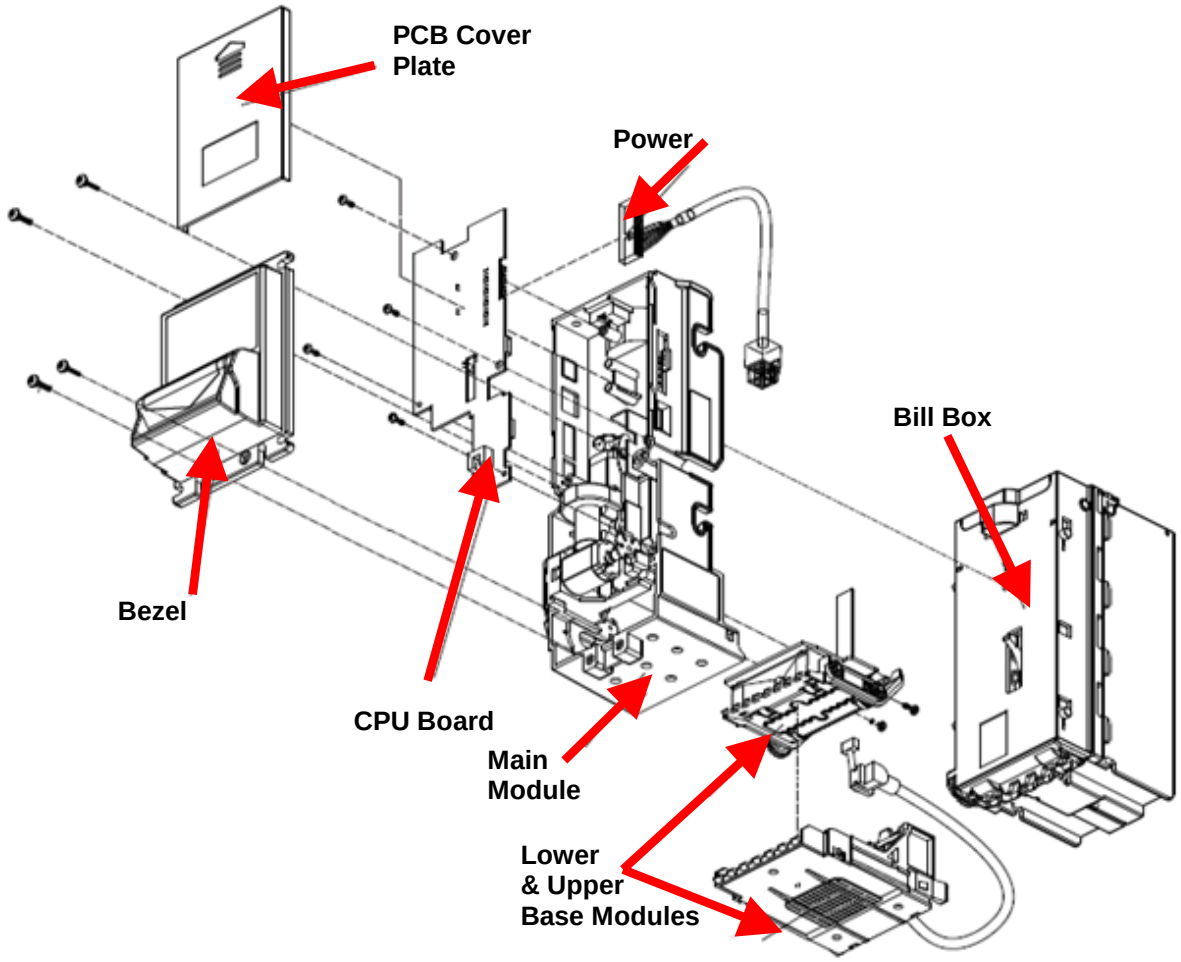

Figure 71 – ICT TAO Bill Validator Components

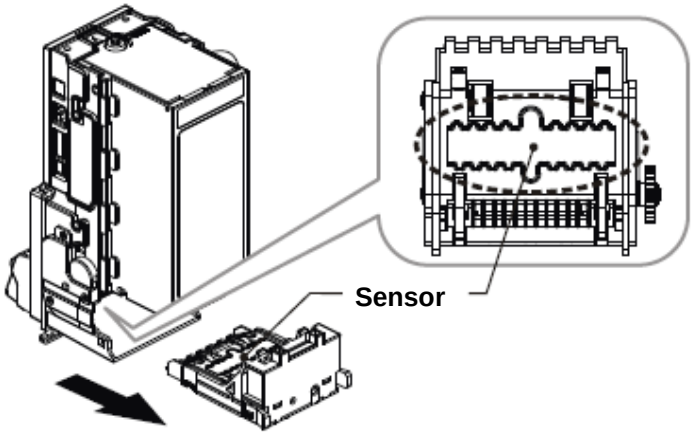

Figure 72 – Bill Validator Sensors

2.12.2. Bill Box Removal

1. Remove bill box by sliding white button.
2. Push up and back on the bill box to remove.

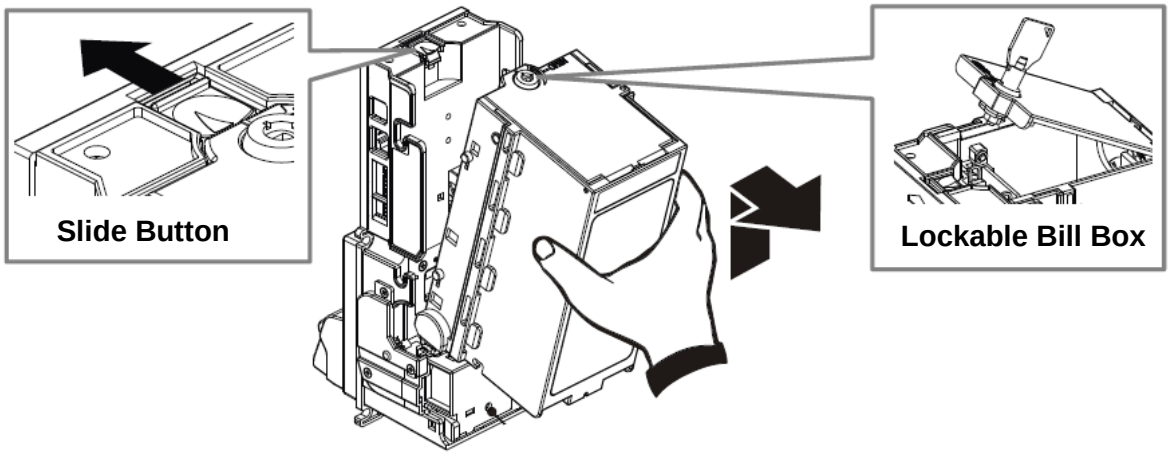

Figure 73 – Bill Box Removal

2.12.3. Bill Path Removal / Clearing Bill Jams

1. Press the buttons on the sides of bill path unit and pull the unit out.

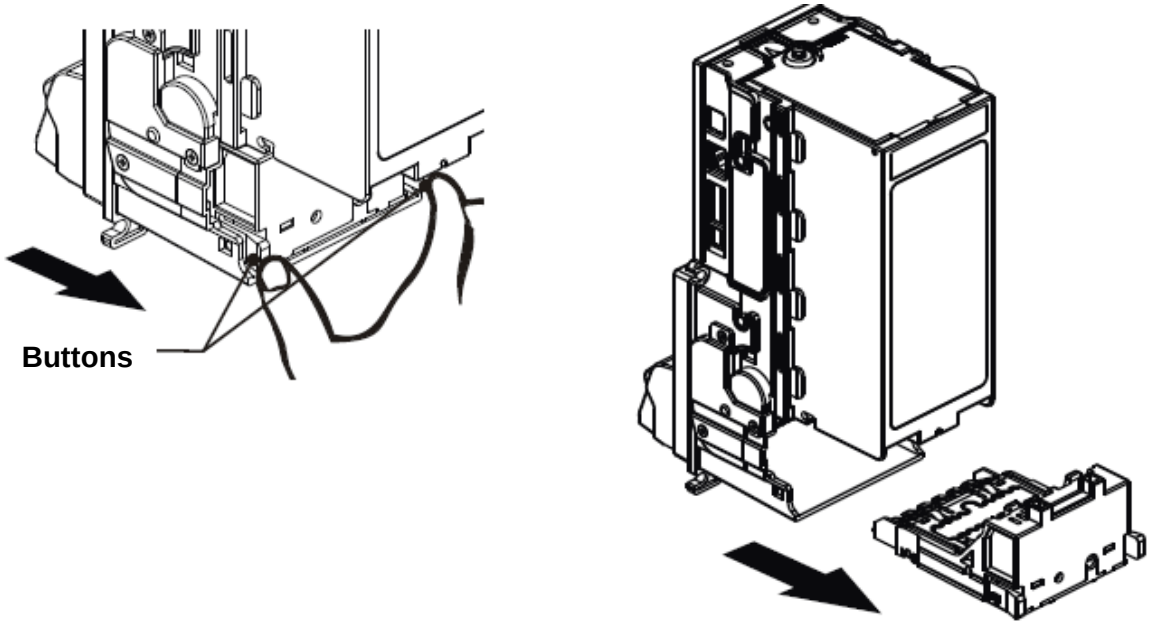

Table 9 – Bill Path Removal

2.12.4. Bill Validator Bezel LED Errors

Figure 74 – Bill Validator Bezel

LED Bezel Status:

- **Glowing**: Normal, no action required
- **Red**: Error, refer to Table 10.

LED Flashes	Status	Corrective Action
1	Bill jammed	Remove and clear bill path
3	Recognition sensor module error	Inspect the foreign objects on sensor or bill path and clean
3+2	Hook sensor error	Inspect the foreign objects on sensor or bill path and clean
3+4	Out sensor error	Inspect the foreign objects on sensor or bill path and clean
2	Disable	Inspect the right DIP switch setting
4	Anti-string sensor error or a stringing attempt has detected	Inspect the foreign objects on sensor or bill path and clean
5	Bill box has been removed	Replace the bill box
6	Stacker error or stacker full	Empty the bill box
7	Motor error	Inspect the foreign objects on bill path and clean

Table 10 – Bill Validator Bezel LED Errors

Section 3 – Theory of Operation

In *Section 3 – Theory of Operation* the electrical and logical operations are explored in depth as well as a system overview to provide better understanding of the prodiGi Vu general functionality.

The objective of section 3 is to describe the voltages related to each component, and the type of logical connection used to transfer data between the peripherals and logic area. Also described are procedures to clearing memory from the prodiGi Vu.

Section Overview:

- Electrical Diagram
- Functional Diagram
- Battery Backup (NVRAM)
- Clearing Memory

3.1. Electrical Block Diagram

The electrical block diagram displays the relation between components and voltages. Fill in the blanks using the components listed below:

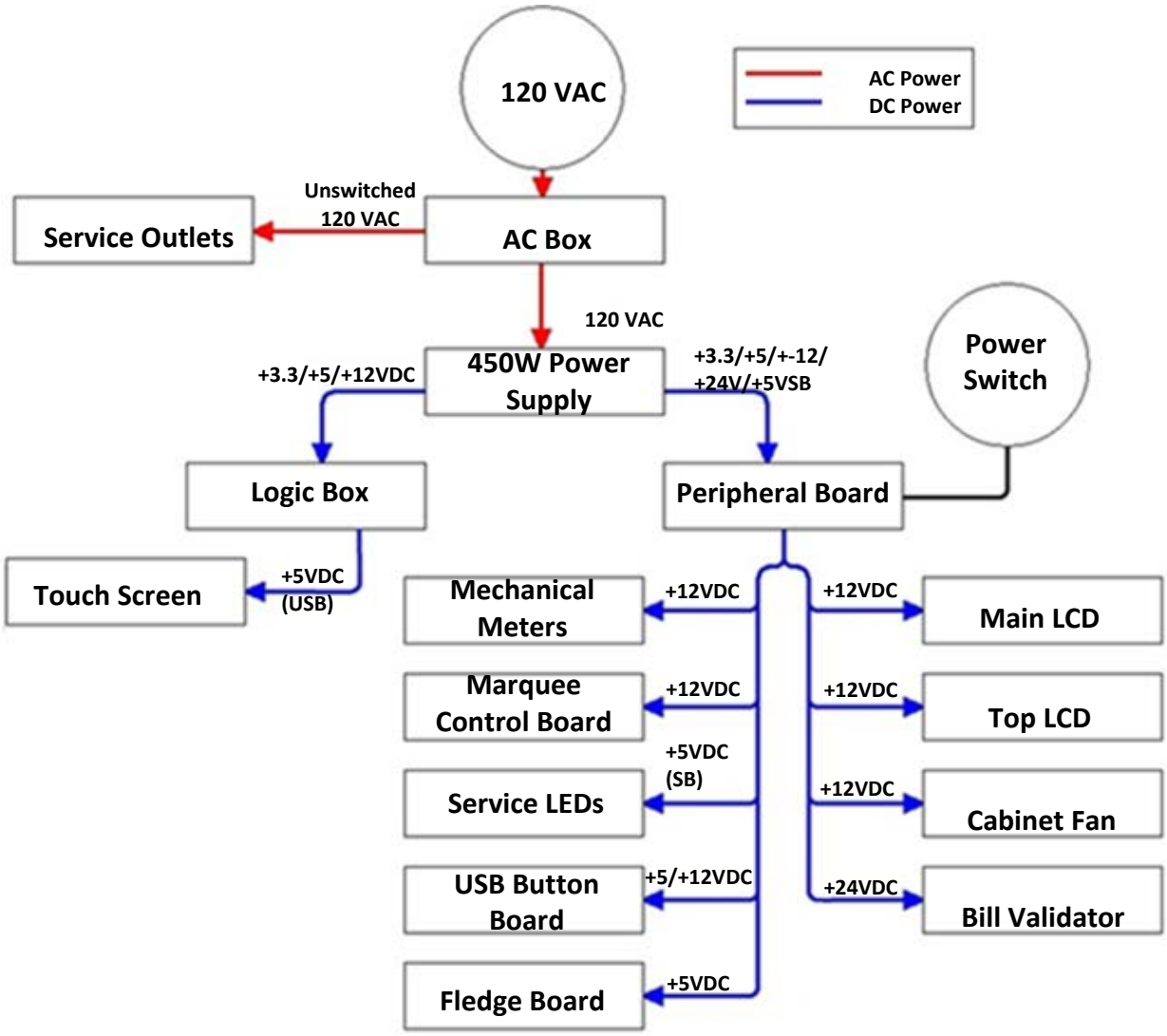

Figure 75 - Electrical Block Diagram

3.2. Functional Block Diagram

The functional block diagram displays the prodiGi Vu peripherals and their connections to the logic box. The main components are the main logic board, video card, I/O board, and peripheral board.

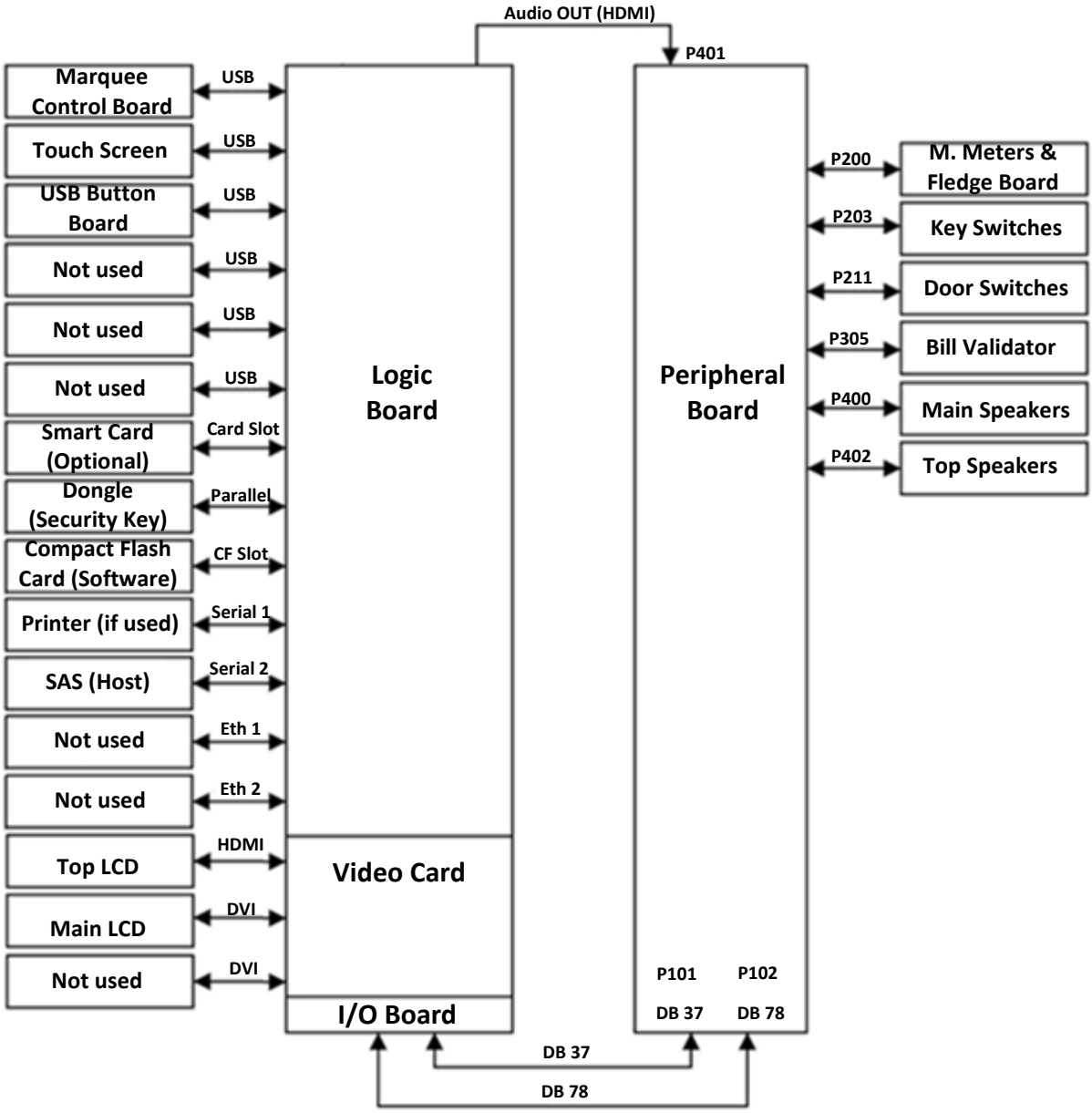

Figure 76 - Functional Block Diagram

3.3. Battery Backup

Battery backup ensures the integrity of the I/O memory is not lost or compromised during an unexpected power failure or power down. The battery backup allows the COAM to continue to monitor all door accesses when the COAM has lost all power (even during a power disconnect).

The I/O Card stores critical information in 16Mb of Non-Volatile RAM (NVRAM). The NVRAM is divided into two 8Mb banks. NVRAM does not contain ANY game content such as graphics, sound, or the operating system.

The information stored in NVRAM consists of:

- User-defined configuration such as the volume settings and communication configurations
- Financial reporting since the last RAM clear
- Game history since the last RAM clear
- System Errors

In the event of a power down (power is completely disconnected from the Logic Box), the I/O card uses the power generated from the battery pack to transfer the data stored in the two 8Mb banks of NVRAM to two banks of 8Mb flash memory. The battery backup consists of four AA rechargeable battery pack found on the logic board (Figure 77). Data is retained for a minimum of 1 year (365 days) in NVRAM when no AC power is supplied to the COAM.

A red LED on the I/O card will be ON at all times. Upon power down, during the transfer from NVRAM to Flash, the LED will remain on until the transfer is complete. The I/O card also has a green LED that represents the charging of the battery pack. This LED should be ON when power is applied to the logic box. When the charge is complete, the LED should turn off.

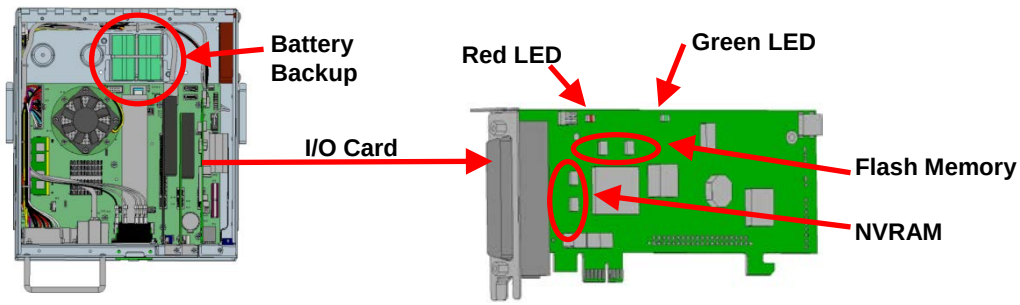

Figure 77 – NVRAM, I/O card, and Battery Backup

3.4. Clearing Memory

WARNING: All memory (NVRAM) will be cleared from the COAM including financial history and configuration settings when software is loaded with either procedure. Software on the prodiGi Vu is stored on a CF card located in the slot on the logic box.

There are two methods of clearing memory in the prodiGi Vu:

- Master Reset
- CFInit

The **Master Reset** procedure erases all information stored in NVRAM and returns the software to its default values. The Master Reset also clears critical errors (RAM errors) that can occur on the machine. The Master Reset does not erase any game software or configurations.

The **CFInit** procedure erases **all** information stored in NVRAM including all financial history and system configuration settings. The CFInit is used to load new software and games on the terminal.

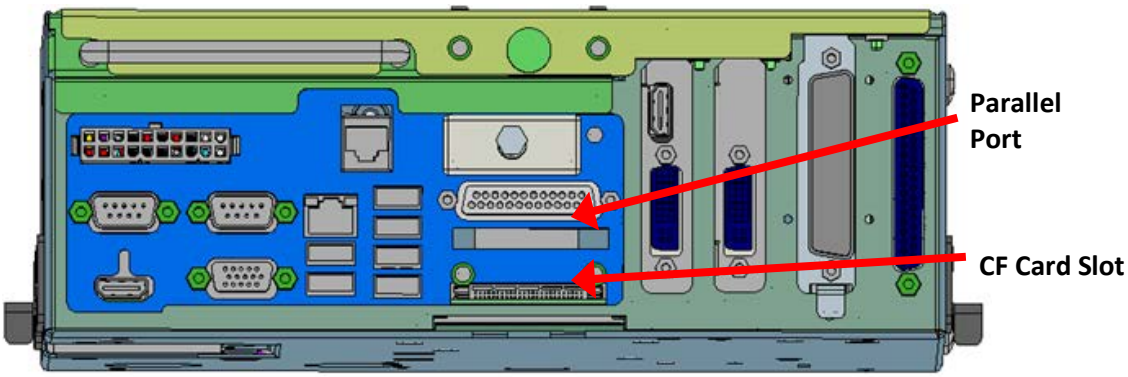

Figure 78 – Logic Box

3.4.1. Master Reset Procedure

Tools Required:

- Master Reset Security Key (Dongle)

1. Open the main door and power OFF the prodiGi Vu.
2. Access the main logic box.
3. Insert the Master Reset Dongle into the parallel port (it only fits one way)
4. Power ON the prodiGi Vu and wait for the “MASTER RESET COMPLETE” message to appear on the monitor.
5. Power OFF the prodiGi Vu, remove the Master Reset Dongle and close the main logic box.
6. Power ON the prodiGi Vu – the software is now returned to its default values and all memory in NVRAM has been cleared.

Figure 79 – Master Reset Security Key (Dongle)

Figure 80 – Master Reset Screen

3.4.2. CFInit

Tools Required:

- CFInit CF card

1. Open the main door and power OFF the prodiGi Vu.
2. Access the main logic box; remove the CF card from Slot 1.
3. Insert the CFInit CF Card into Slot 1.
4. Power ON the prodiGi Vu.

CRITICAL: This step will clear ALL memory from the prodiGi Vu. Once erased it cannot be retrieved.

5. A blue screen will appear.

Figure 81 – CFInit Screen

6. Power OFF the prodiGi Vu, remove the CFInit CF card.
7. Re-install the game software CF card in Slot 1 and Power ON the terminal and configure settings.

Section 4 – Operator Menus

In *Section 4 – Operator Menus,* all back office menu options are illustrated and explained. It is important to note that menu screens and options are determined by security level. Typically, Attendants have Access Level 1 and Technicians Access Level 2.

Section Overview:

- Accessing the Back Office Menus
- Back Office Menus Introduction
- Gaming Machine Tab
- Accounting Tab
- History Tab
- Test Tab
- Options Tab
- Comm Tab

4.1. Accessing the Back Office Menus

There are two levels of security that determine which back office menus and options are available and configurable to a user. The security levels are accessed through key switches. The access level and key switch types are:

Access Level 1: Audit Key Switch –Allows the user to view the options in the back office menus. However, many of the configurations are locked.

Access Level 2: Technician Key Switch – Allows the technician to view and configure most of the available settings and options.

Security Key/Dongle (level 3 access): When inserted into the parallel port it allows the user to access all settings and options.

WARNING: Rebooting the COAM with the Security Key / Dongle connected to the logic box will perform the Master Reset process and all accounting data in NVRAM will be erased!

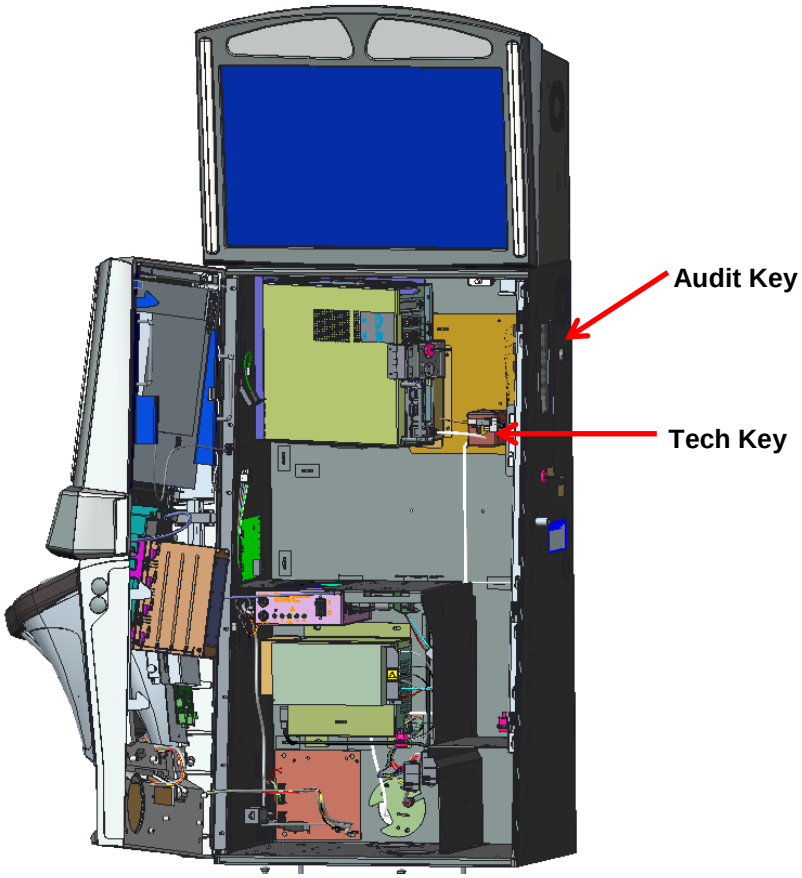

Figure 82 – Tech and Audit Key Locations

4.2. Back Office Menus Introduction

The back office menus are the administrative menu for games, software and system management.

The back office menus allow authorized users to perform:

- Hardware Configuration
- Software Configuration
- Peripheral and Communication Tests
- Verification of Financial status
- Resolve Player Disputes

The back office menus are accessible at all times and will remain available when the machine is disabled under normal operating conditions.

The back office menus are displayed in a series of tabs. Every top level tab reveals a unique set of lower level tabs (or sub-tabs). The access level of the user determines what tabs and sub-tabs are visible or not. When the amount of information is greater than what can be displayed on the screen some menus will have scroll bars as well as right and left arrow buttons.

Virtual Keyboards and Keypads are used to enter characters and numbers into alphanumeric & numeric text boxes while in the back office menus.

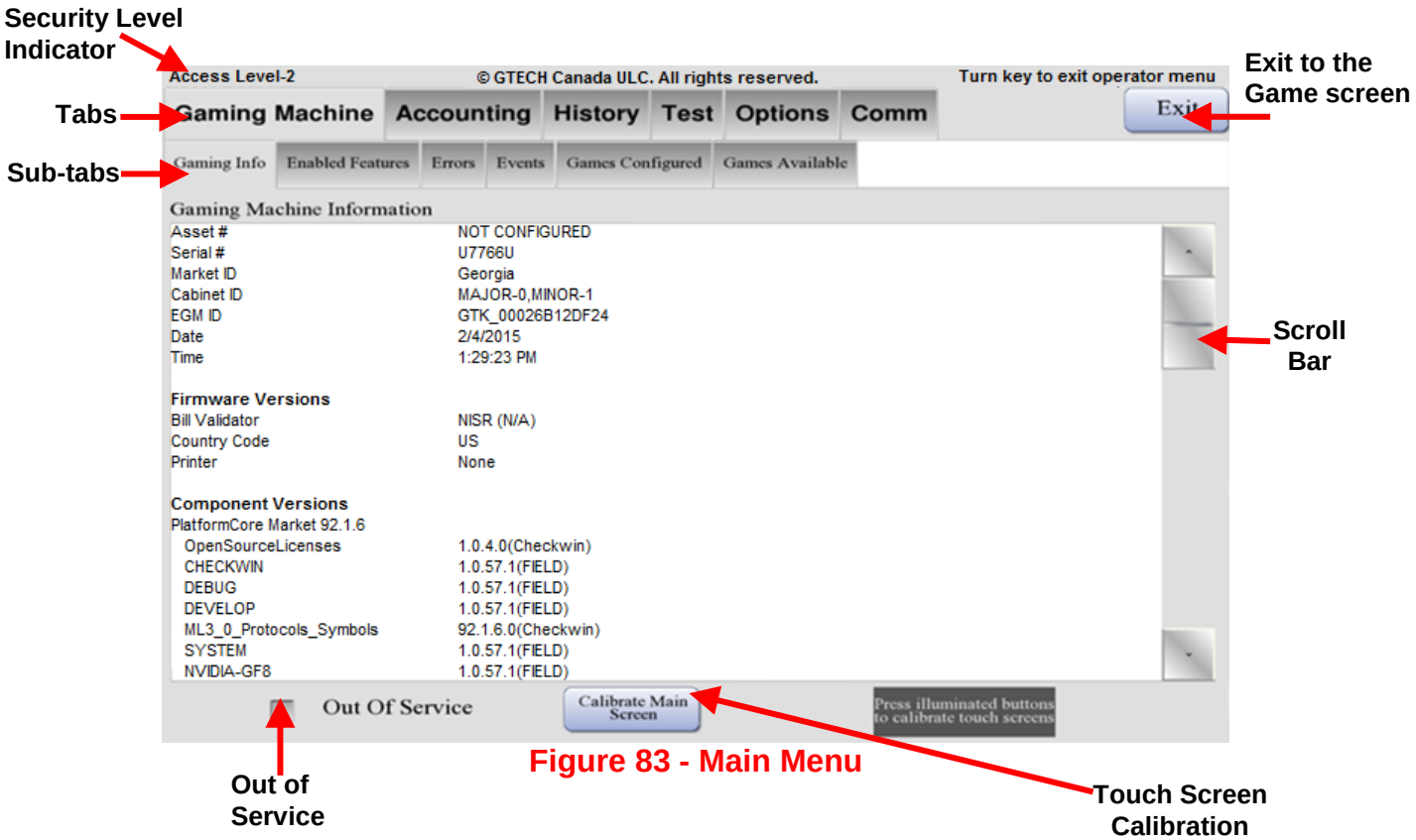

Figure 83 - Main Menu

4.2.1. Out of Service

From the main menu the user is able to take the terminal out of service by selecting the **Out of Service** checkbox. The screen will display “Terminal Disabled – Disabled by Technician” when this feature is enabled. To return to service, simply deselect the **Out of Service** check box.

4.2.2. Calibrate Touch Screen

Selecting the **Calibrate Touch Screen** button will launch the touch screen calibration utility. The calibration process can also be started by pressing the illuminated mechanical button on the machine. Use this method if the on-screen button is not available.

To calibrate the touch screen:

1. Touch the **Calibrate Touch Screen** button.
2. The calibration utility screen will be displayed on the main screen, touch the **plus sign** each time it moves to a new location on the screen.
3. When calibration is complete the main menu will reappear.

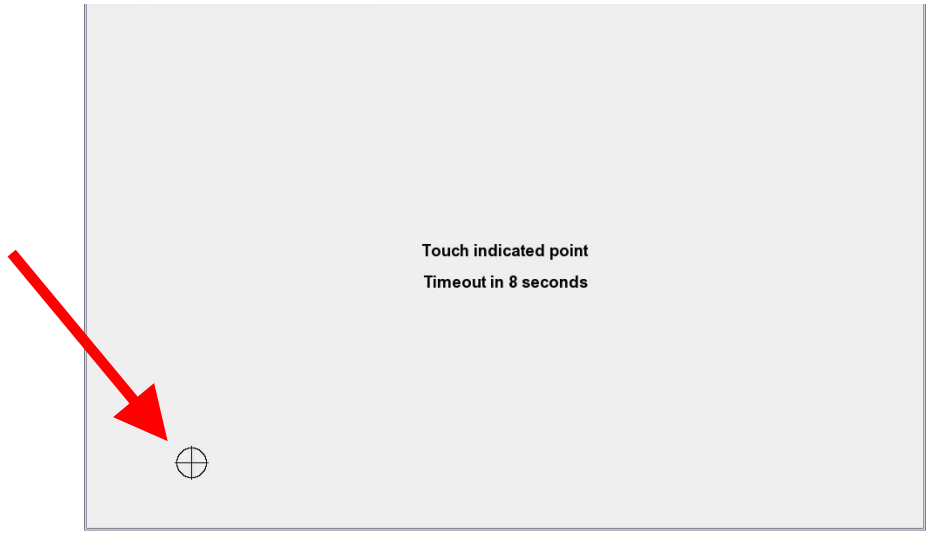

Figure 84 – Main Screen Calibration Utility

4.3. Gaming Machine

The **Gaming Machine** tab displays the COAM configured settings. All information is displayed as read-only.

The **Gaming Machine** tab includes the following sub-tabs:

- Gaming Info
- Enabled Features
- Errors
- Events
- Games Configured
- Games Available

Figure 85 – Gaming Machine

4.3.1. Info

The **Info** sub-tab displays general information about device identification data, firmware configuration, and system data. To view all information use the scroll bar along the right hand side of the screen. The **Info** page displays the status of the: Gaming Machine, Firmware Version, Component Version, System RAM, NVRAM, and Flash Memory.

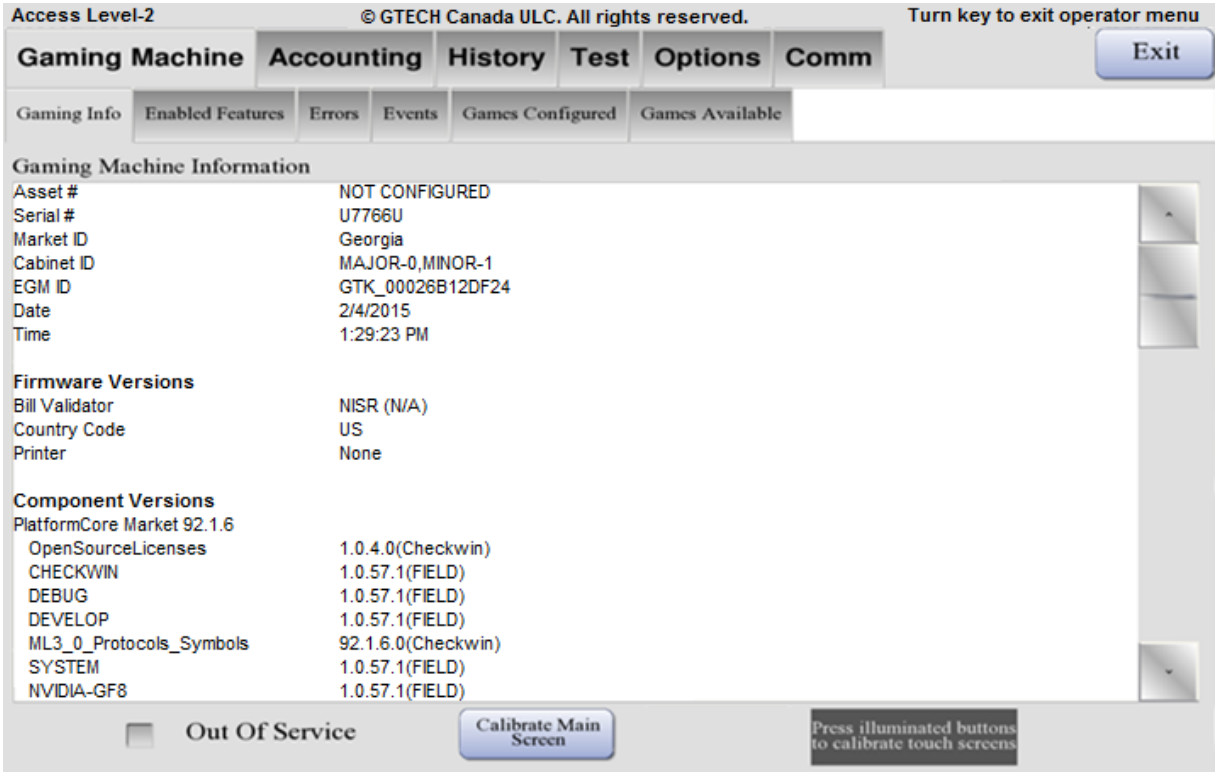

Figure 86 – Info

4.3.2. Enabled Features

The **Enabled Features** sub-tab displays the status of all configurable options on the COAM. This information is organized into three categories, **Options**, **SAS Protocol** and **Jackpots**.

The **Options** page displays the status of the: Volume, Button Board, Candle, Communications, Devices, Video Options, Player Response Timer, Configured Games, Progressives, Bonus Pots, Local Progressives, Local Bonus Pots, Play Options, Credit Display, Game Language, Responsible Gaming, Credit Limits, Hard Meters, Door Tickets, Serial Number, Ticket Information, Stereoscopic Display, and Gaming Chair.

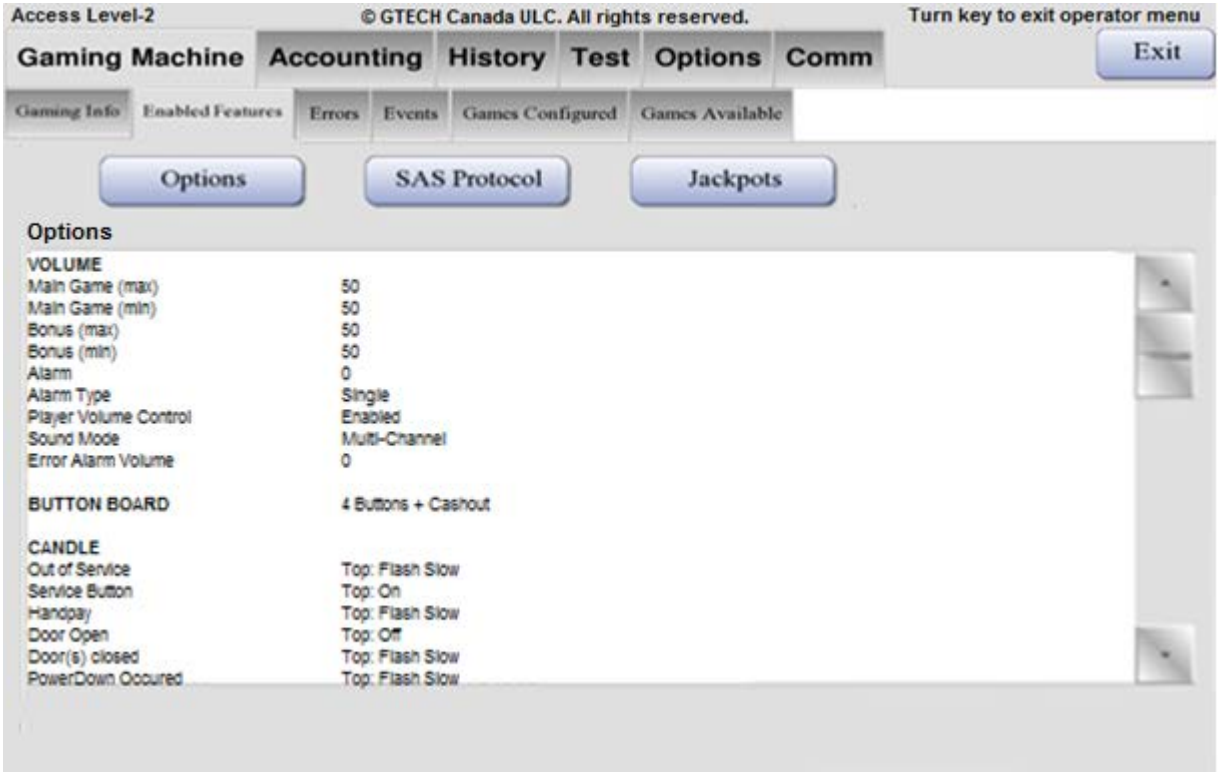

Figure 87 – Enabled Features, Options

The **SAS Protocol** page displays COAM settings such as: Port Assignment, Port Configuration, Fiber Optic, Handpay Reset, Validation, Legacy Bonusing, Advanced Funds Transfer, Electronic Funds Transfer, and Game Exceptions.

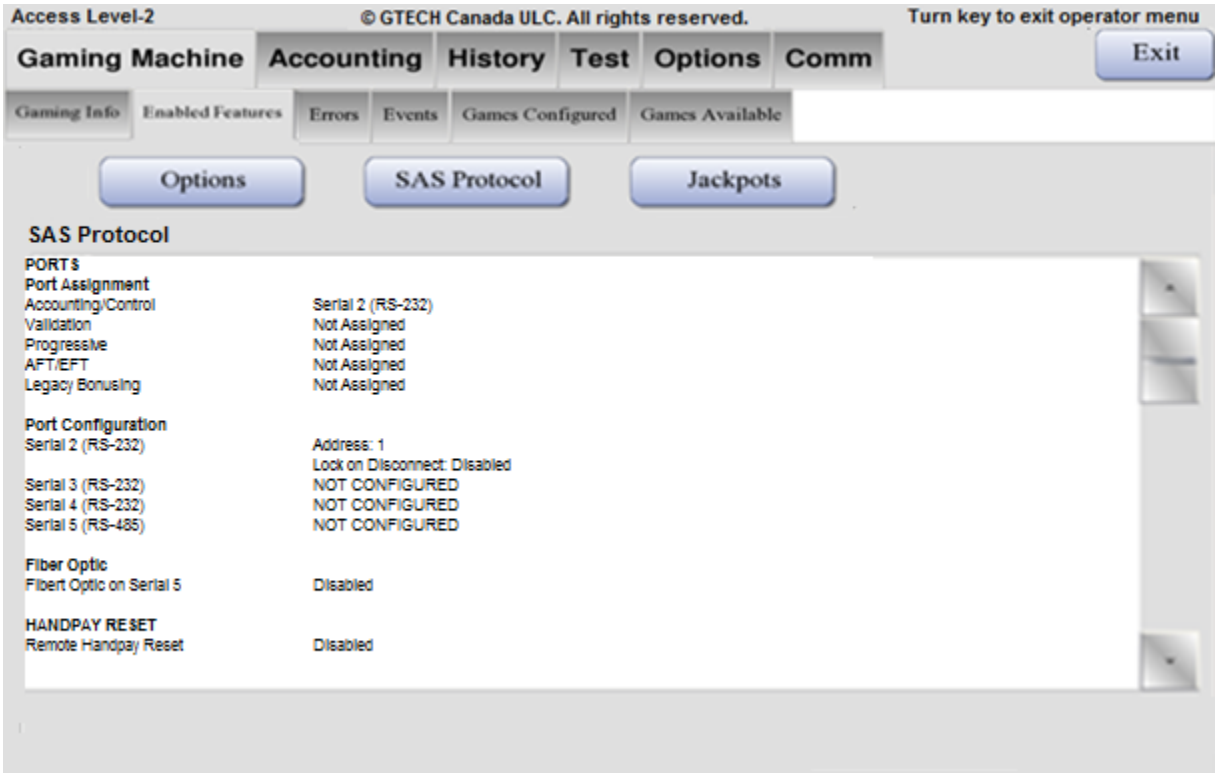

Figure 88 – Enabled Features, SAS Protocol

The **Jackpot** page displays information on game jackpots for each level. Data includes: Controller Type, Base Value, Increment percentage, and Contribution Method.

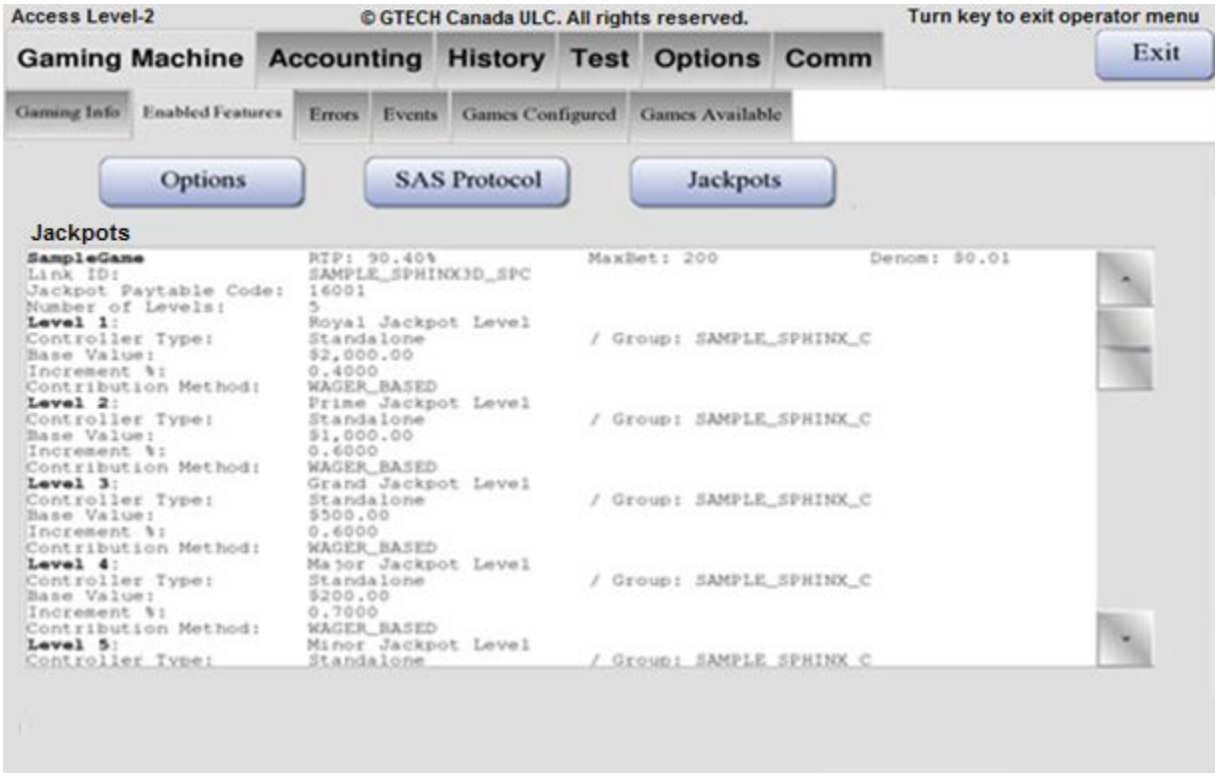

Figure 89 – Enabled Features, Jackpots

4.3.3. Errors

The **Errors** sub-tab displays any current errors on the machine such as open doors, protocol, and peripheral errors.

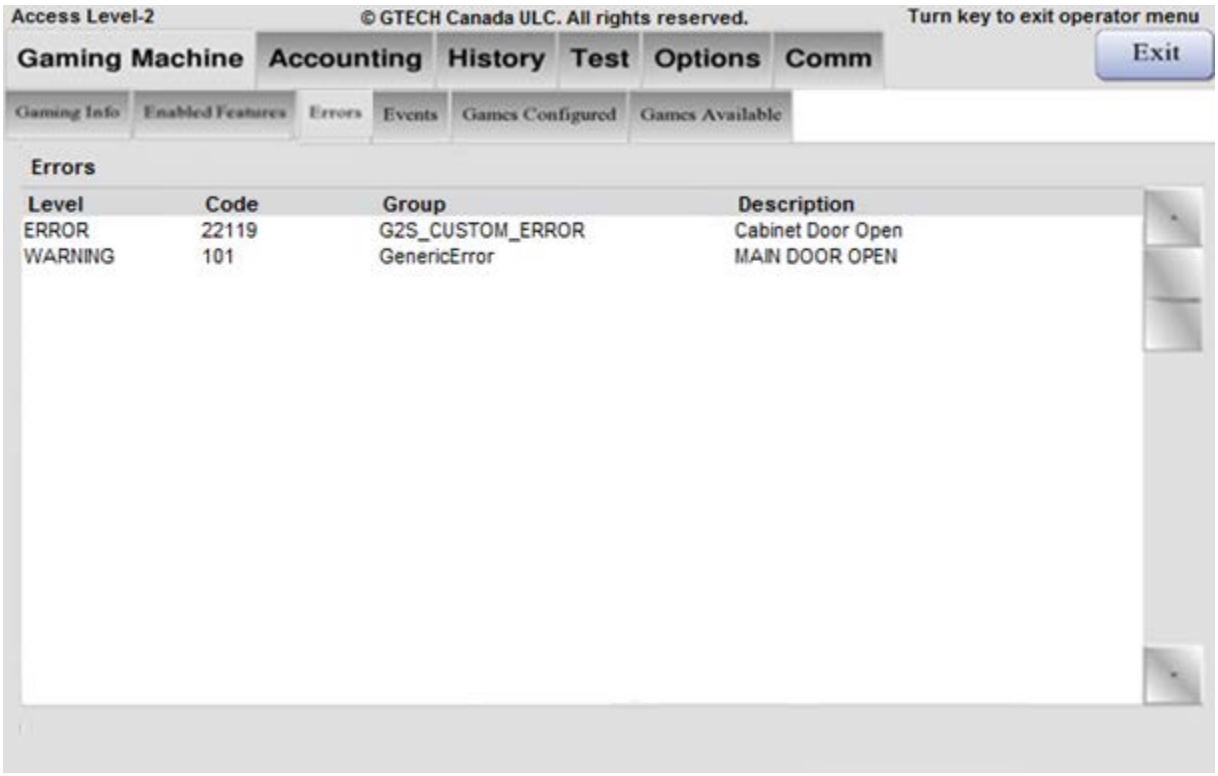

Figure 90 – Errors

4.3.4. Events

The **Events** sub-tab displays the number of times a specific event occured on the machine. Events include: Door Accesses, Games Won & Played, Power Resets, Bill and Coin Validator jams and errors, Menu Accesses, Power Reset/Restore, and Period/Master Reset.

WARNING: When a Master Reset is performed the event counters listed below are reset to zero.

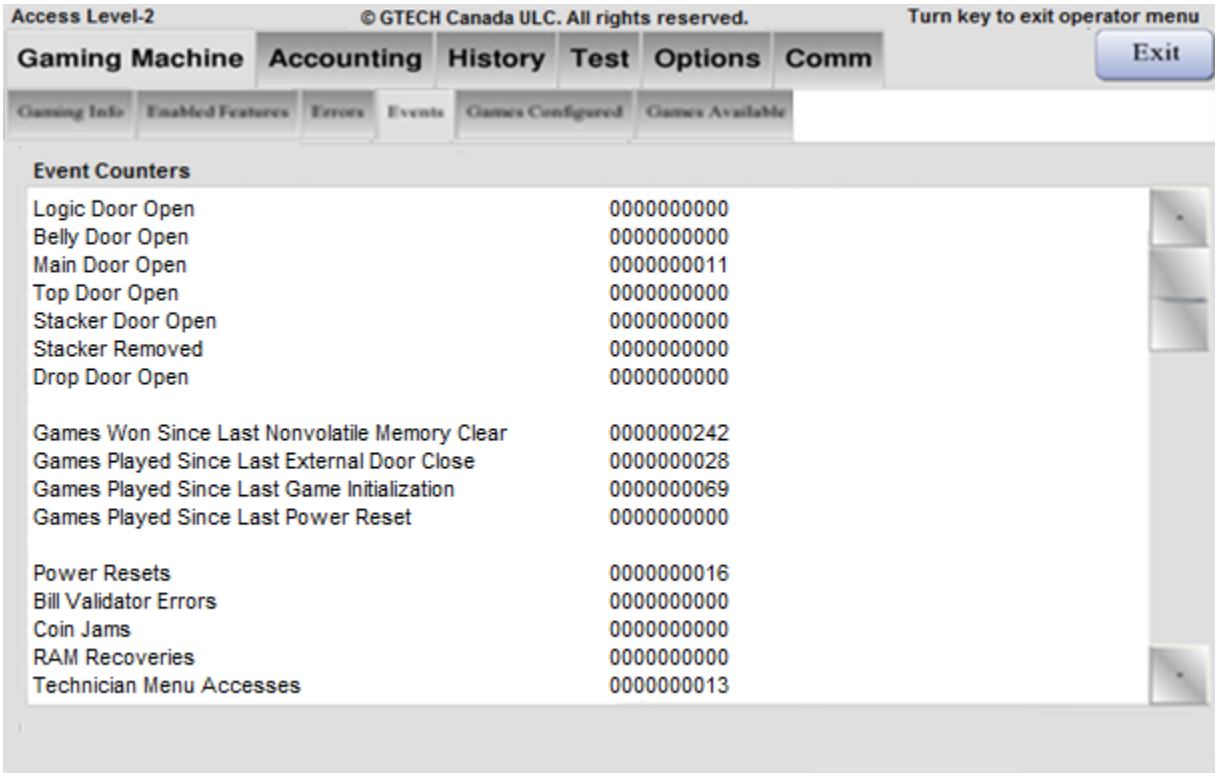

Figure 91 – Events

4.3.5. Games Configured

The **Games Configured** sub-tab provides the status of each game configured on the COAM. Data includes: Slot, Type, Credit, Game Name, and Enabled Status. Select the game and touch the **Details** button for more information (Denomination, MinBet, MaxBet and Enabled Status).

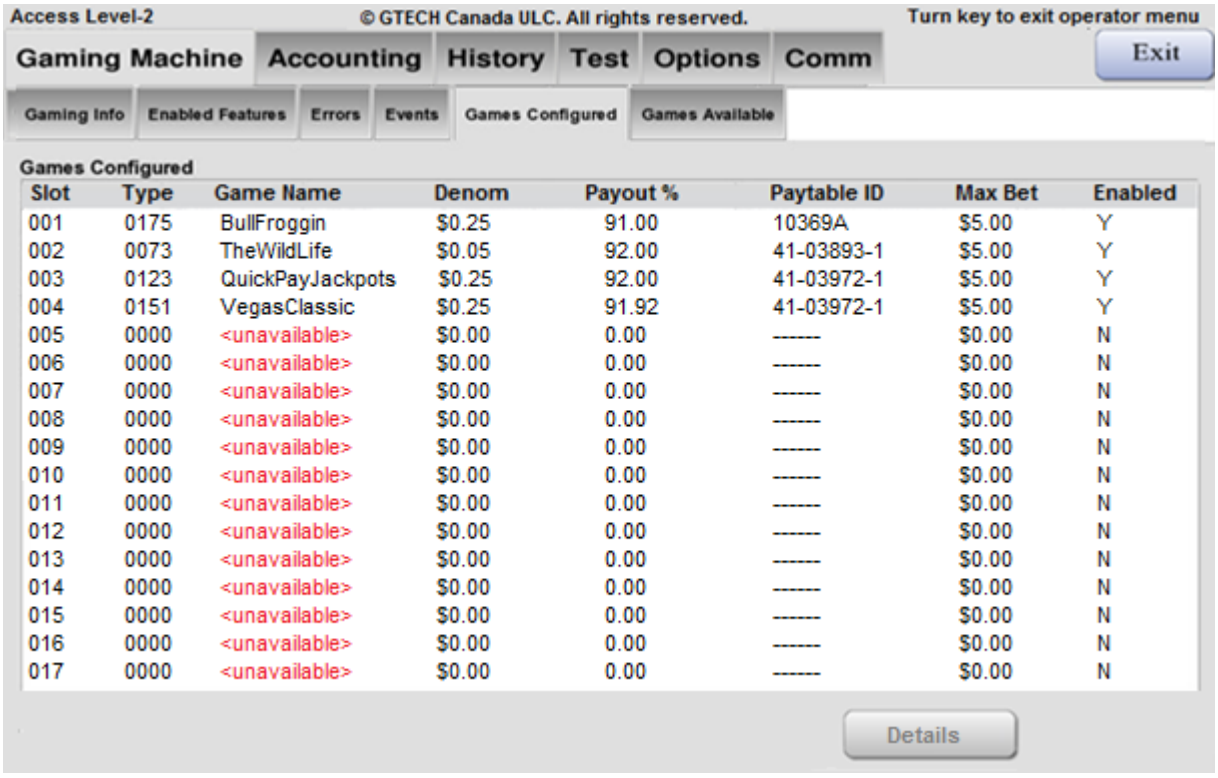

Figure 92 – Games Configured

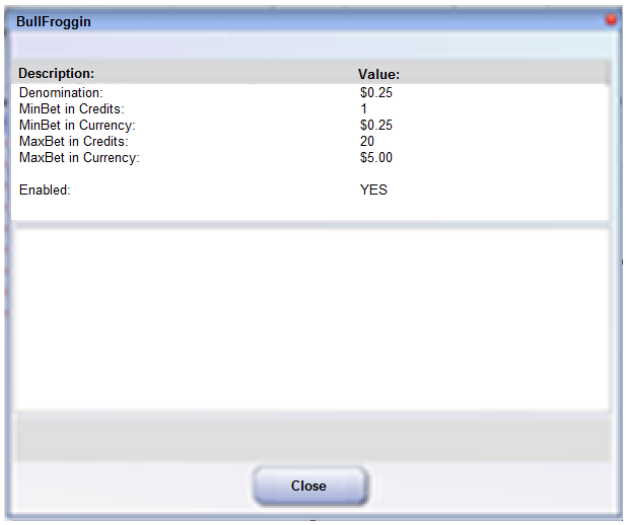

Figure 93 – Games Configured, Details

4.3.6. Games Available

The **Games Available** sub-tab provides the name, version, and game type of each game theme stored in the memory on the COAM regardless of whether or not they've been configured.

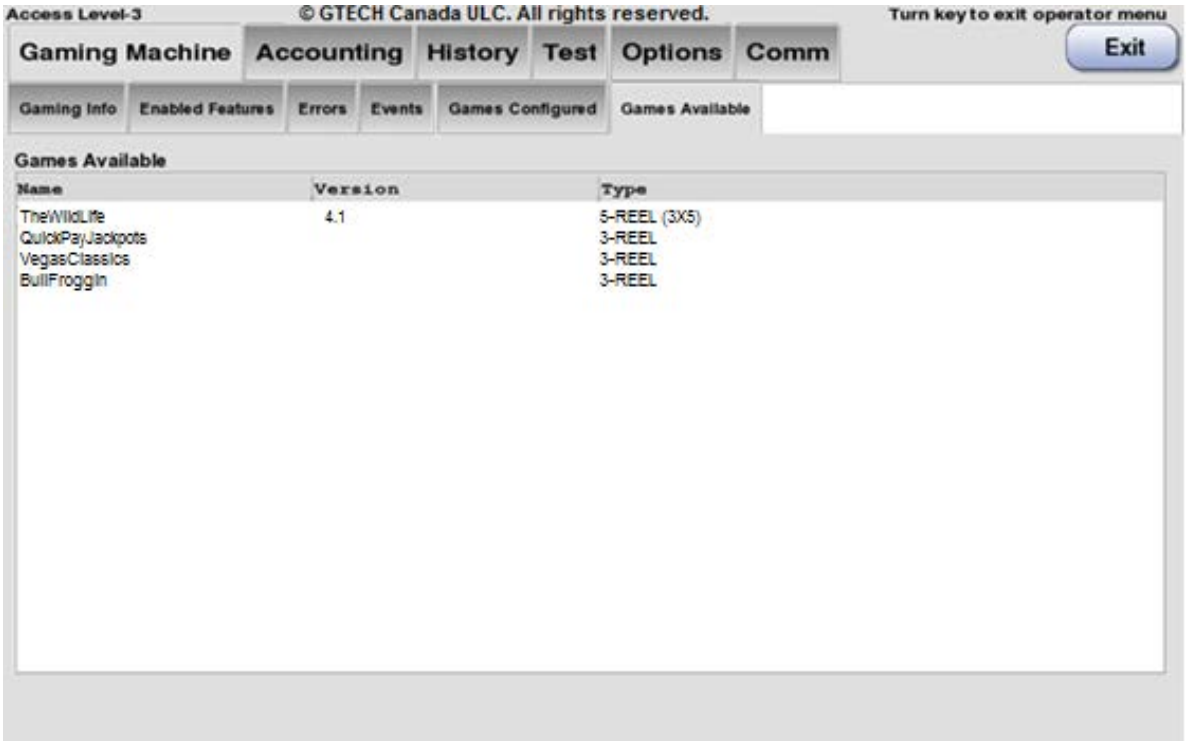

Figure 94 – Games Available

4.4. Accounting

The **Accounting** tab provides access to slot accounting meters for the COAM. Data found within this screen will reconcile with the corresponding data on the host system.

The **Accounting** tab includes the following sub-tabs:

- Basic Meters
- Advanced Meters
- Game Play
- Period Reset

Figure 95 – Accounting

4.4.1. Basic Meters

WARNING: Basic accounting meters are reset when a Master Reset is performed.

The **Basic Meters** sub-tab displays data for the most common slot accounting meters.

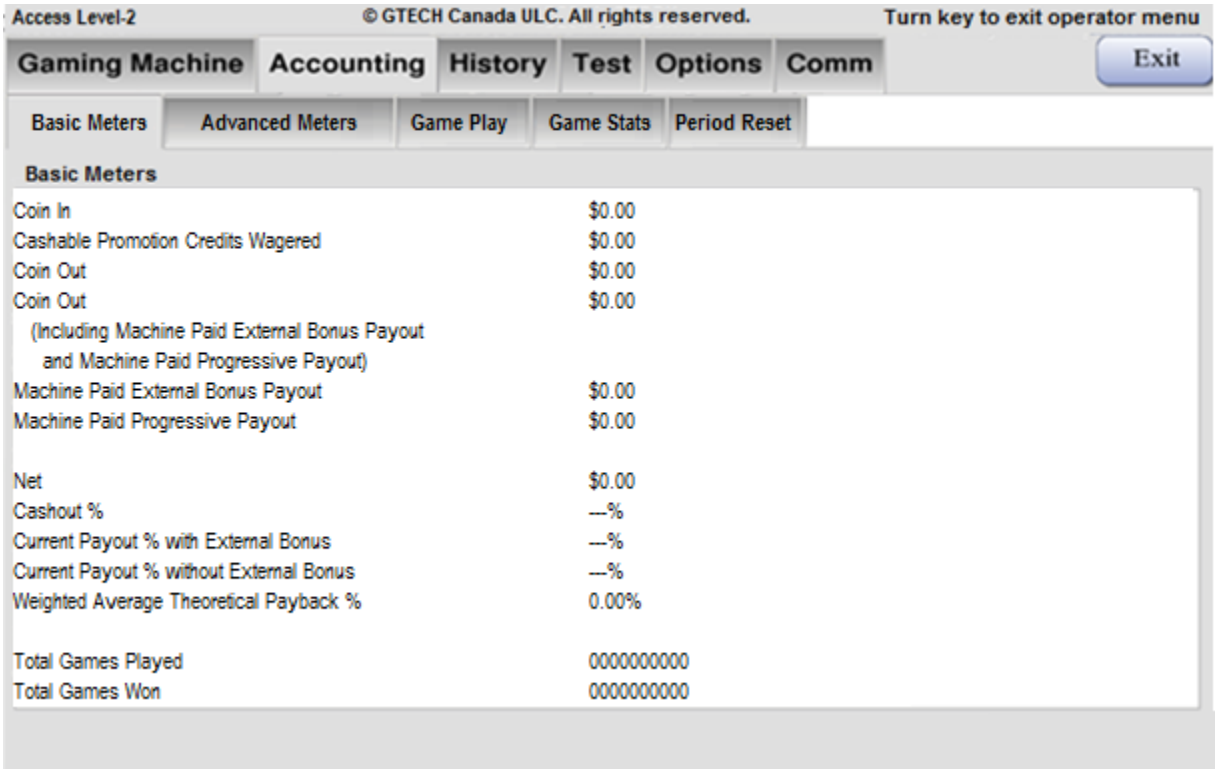

Figure 96 – Basic Meters

4.4.2. Advanced Meters

The **Advanced Meters** sub-tab displays detailed slot accounting meters for the COAM, and includes: **Money In**, **Money Out**, **Bill Information**, **Progressives, Bonus Pot**.

The **Money In** page is displayed by default. This screen provides details of all funds entered into the COAM. It includes amounts inserted, bills in, vouchers in, cash in, electronic transfers in, and total drop.

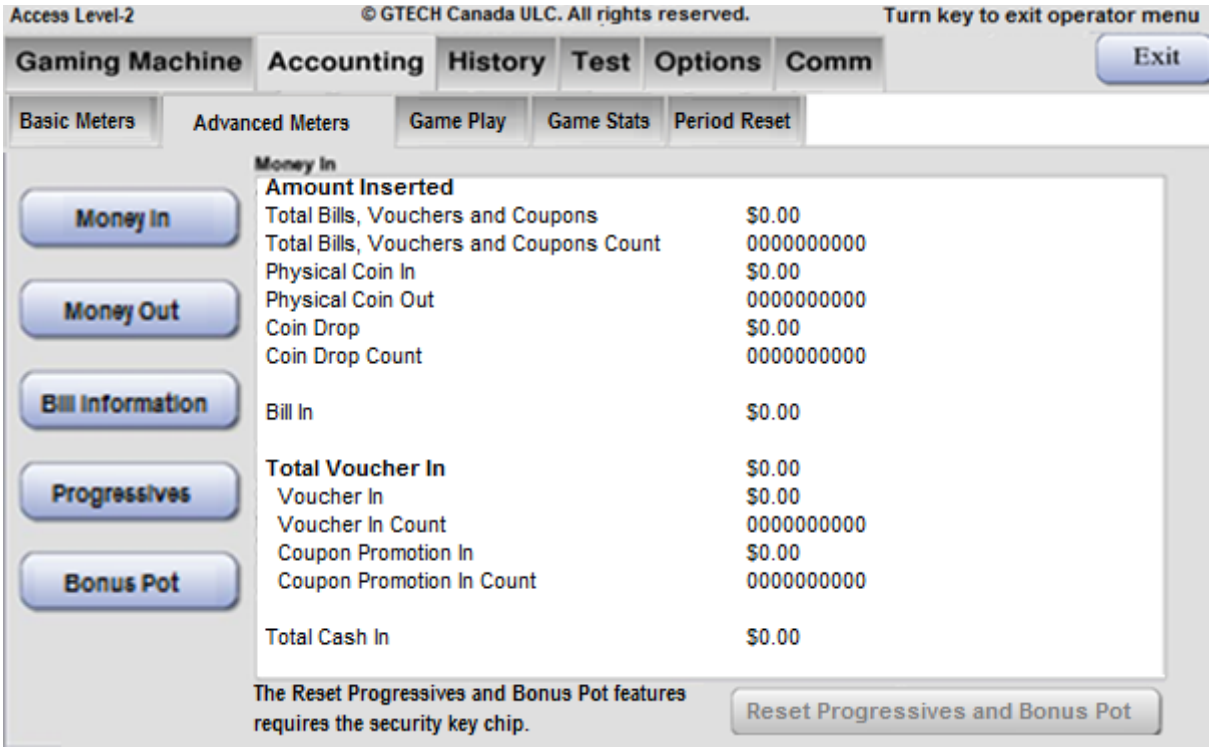

Figure 97 – Advanced Meters, Money In

The **Money Out** page displays details of all funds leaving the COAM. It includes amounts paid, attendant paid, terminal paid and electronic transfers out.

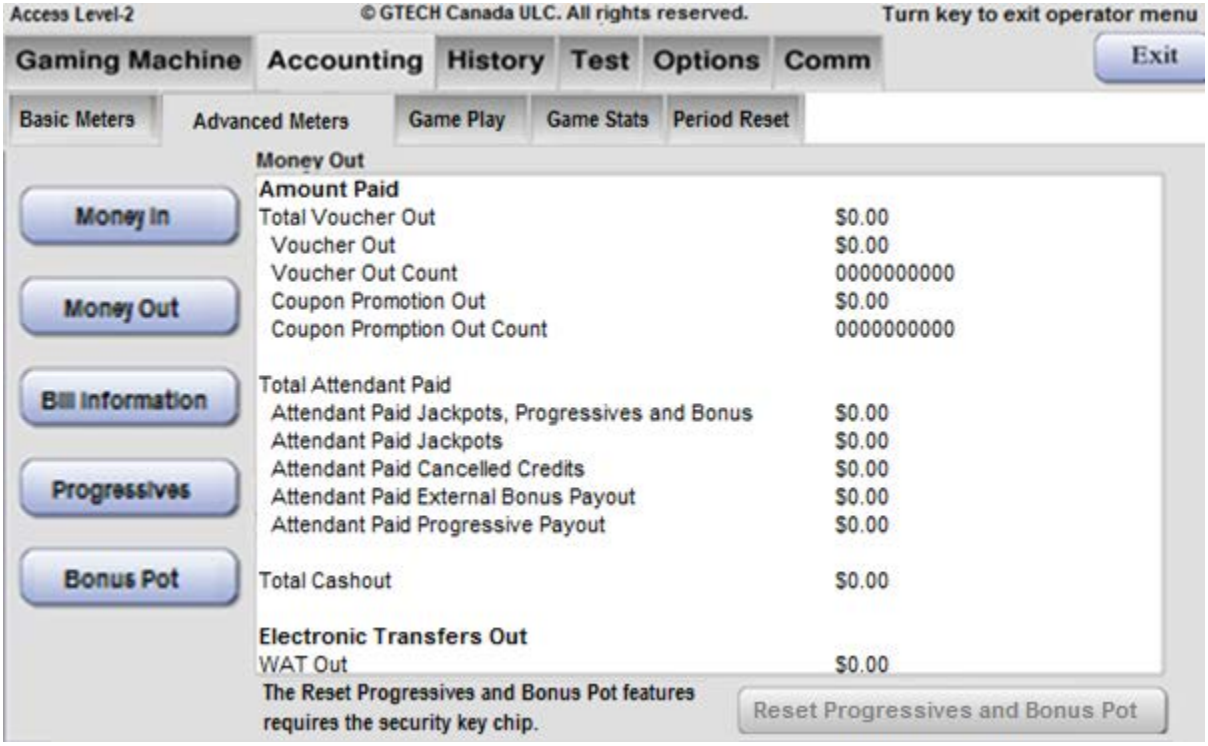

Figure 98 – Advanced Meters, Money Out

The **Bill Information** page displays bill counters, bill amounts, including vouchers and promotions.

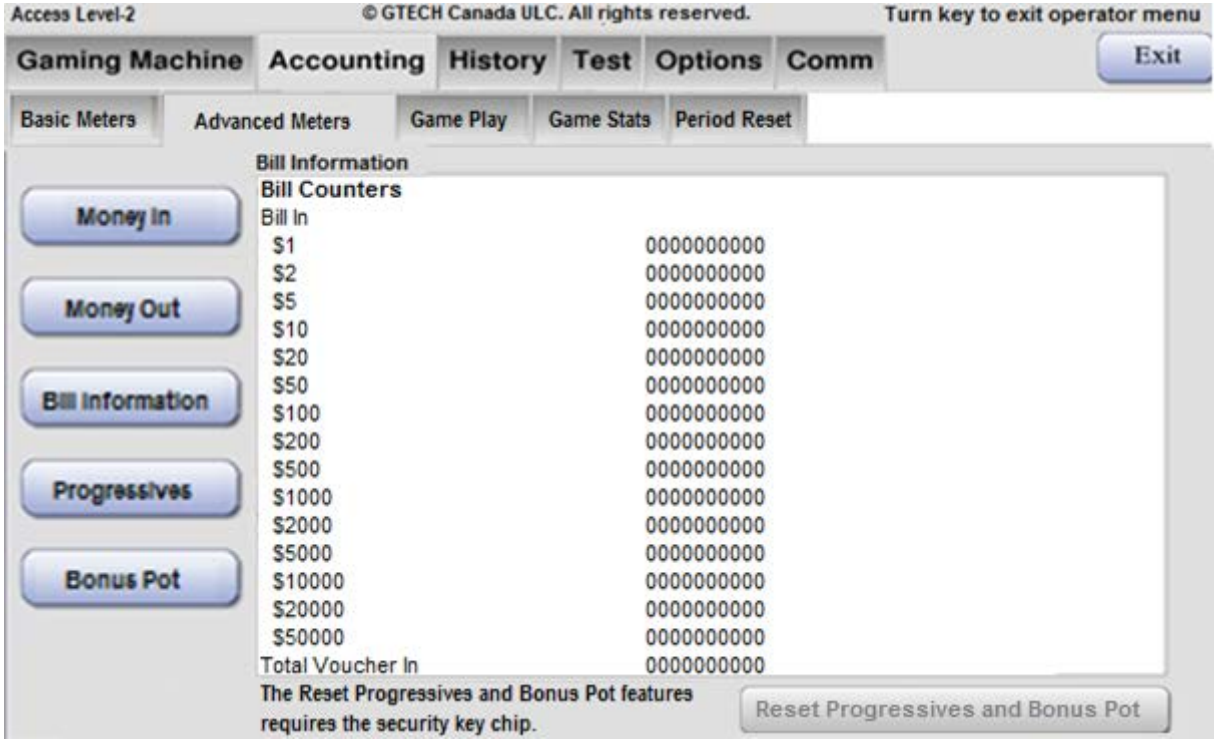

Figure 99 – Advanced Meters, Bill Information

The **Progressives** page displays key accounting data for each individual progressive level configured on the COAM. All data on this page persists through a Master Reset and can only be reset by a CFInit on the logic box. Typically, the level 1 progressive represents the pot with the higher increment rate.

Each level shows the following:

- **Total Paid**: a cumulative amount that this progressive level has paid out to players.
- **Maximum Payout**: displays the ceiling (or cap) of that specific jackpot. The value of the jackpot will never exceed the maximum payout.
- **Minimum Payout**: displays the minimum possible value of that specific jackpot. The value of the jackpot will never be smaller than the minimum payout.
- **Total Increment**: a cumulative amount that this progressive level has increased.
- **Times Hit**: the number of times this progressive level has been won by players.

The **Reset Progressives and Bonus Pot** button clears the progressive and bonus pot values without performing a CFInit.

1. Insert the Level 3 access dongle and paytable dongle together in the logic box to activate the button.
2. Press the Reset Progressives and Bonus Pot button to initiate the process for a special master reset that will clear the progressives and bonus pot values.

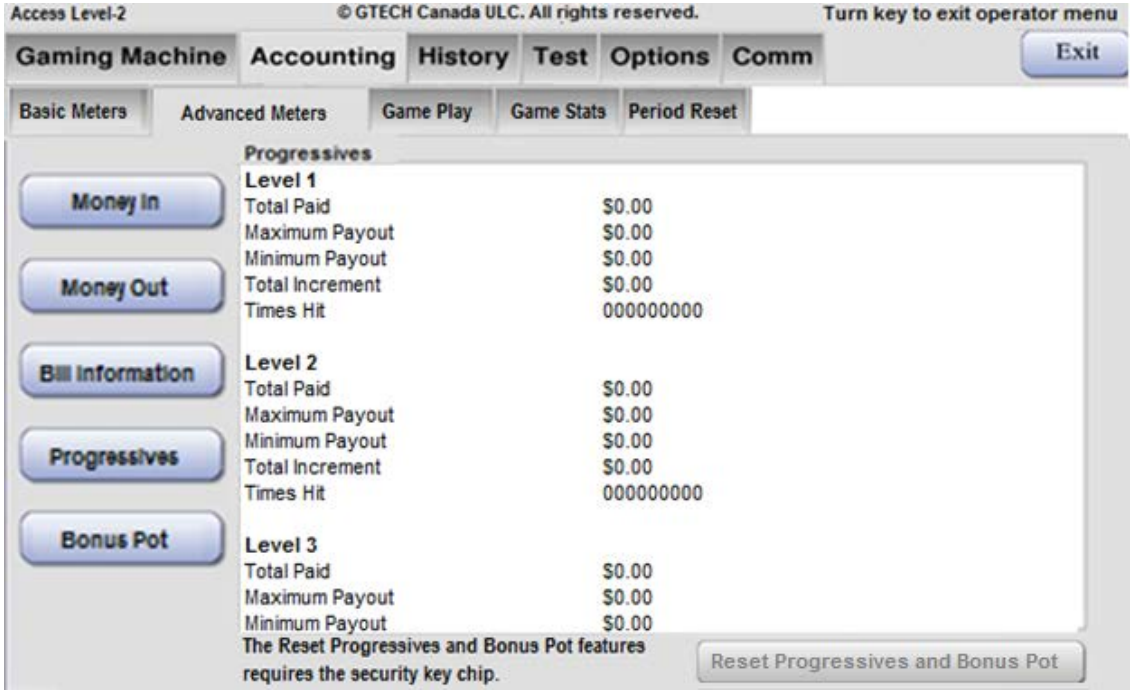

Figure 100 – Advanced Meters, Progressives

The **Bonus Pot** page displays key accounting data for each individual bonus pot level configured on the COAM. All data on this page persists through a Master Reset and can only be reset by clearing all NVRAM on the logic box. Typically, the level 1 bonus pot represents the pot with the higher increment rate.

Each level shows the following:

- **Total Paid**: a cumulative amount that this bonus pot level has paid out to players.
- **Maximum Payout**: displays the ceiling (or cap) of that specific bonus pot. The value of the bonus pot will never exceed the maximum payout.
- **Minimum Payout**: displays the minimum possible value of that specific bonus pot. The value of the bonus pot will never be smaller than the minimum payout.
- **Total Increment**: a cumulative amount that this bonus pot level has increased.
- **Times Hit**: the number of times this bonus pot level has been won by players.

The **Reset Progressives and Bonus Pot** button clears the progressive and bonus pot values without performing a CFInit.

1. Insert the Level 3 access dongle and paytable dongle together in the logic box to activate the button.
2. Press the Reset Progressives and Bonus Pot button to initiate the process for a special master reset that will clear the progressives and bonus pot values.

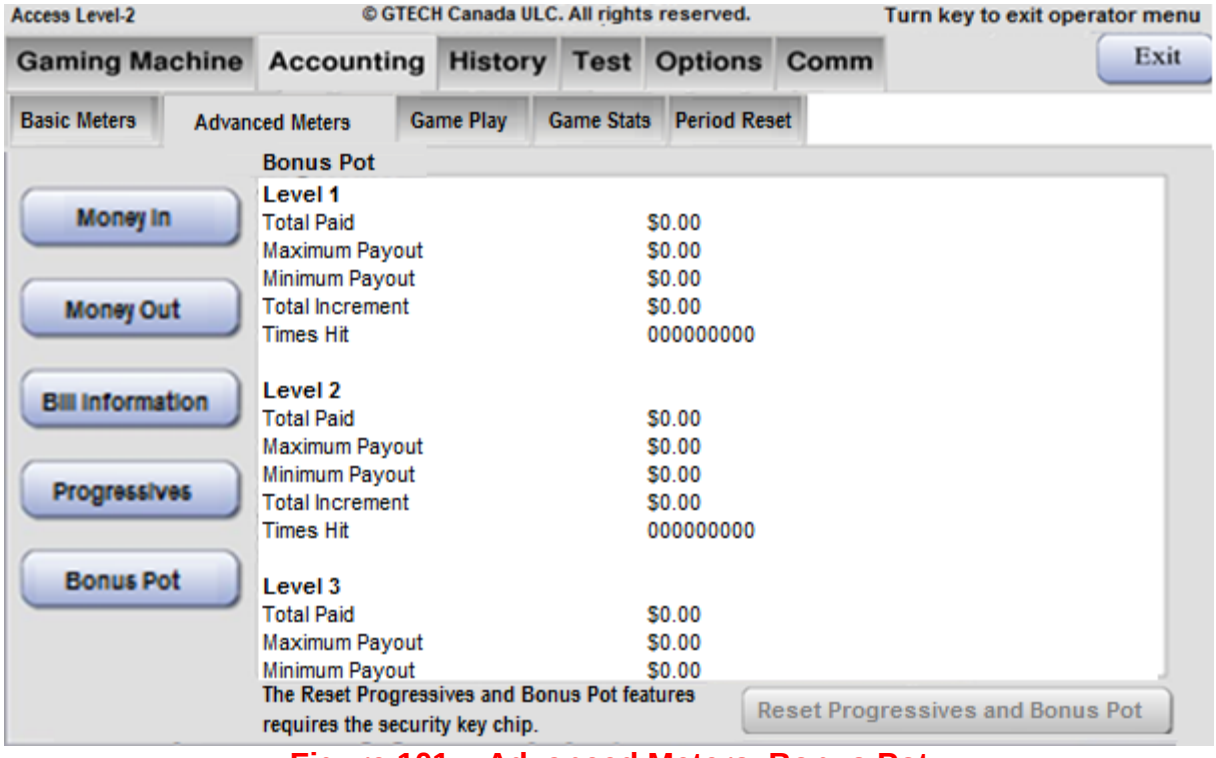

Figure 101 – Advanced Meters, Bonus Pot

4.4.3. Game Play

The **Game Play** sub-tab provides a summary of all accounting data related to games configured and played on the COAM. This sub-tab provides four different methods of viewing this information, each method represented by selectable button – **All Games**, **Slot**, **Game**, and **Denomination**. The method preferred can be selected by touching the appropriately labeled button. The **All Games** page is open by default.

NOTE: The Skill meters are not used in this configuration; and do not increment.

The **Export to USB** button saves the log files to a USB device as a text (txt) file. The button will enable once a USB device is connected, and is accessible to all access levels.

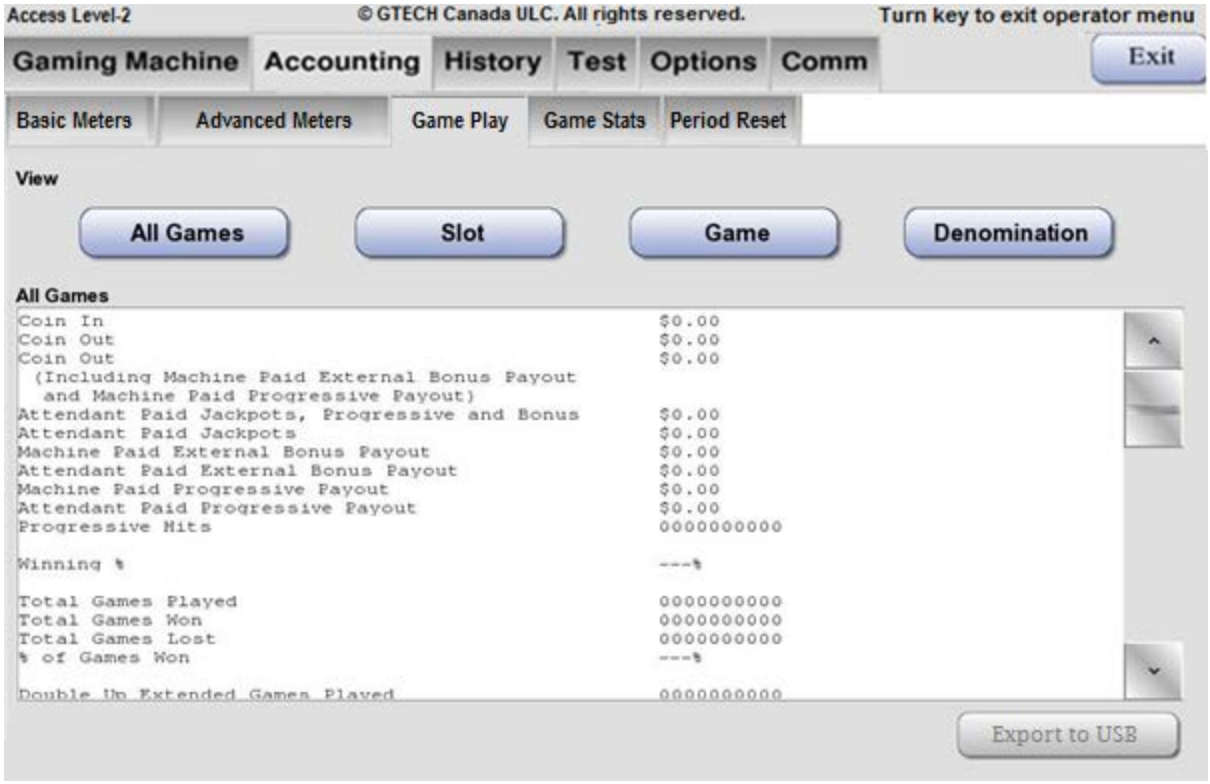

Figure 102 – Game Play

The **Slot** page displays a summary of all accounting information per slot. A slot is created when a game theme and its paytable/denomination are configured. Some themes can have more than one paytable/denomination configuration. If that is the case then a second slot would be listed on this page along with the corresponding accounting summary. A COAM can have up to 60 slots.

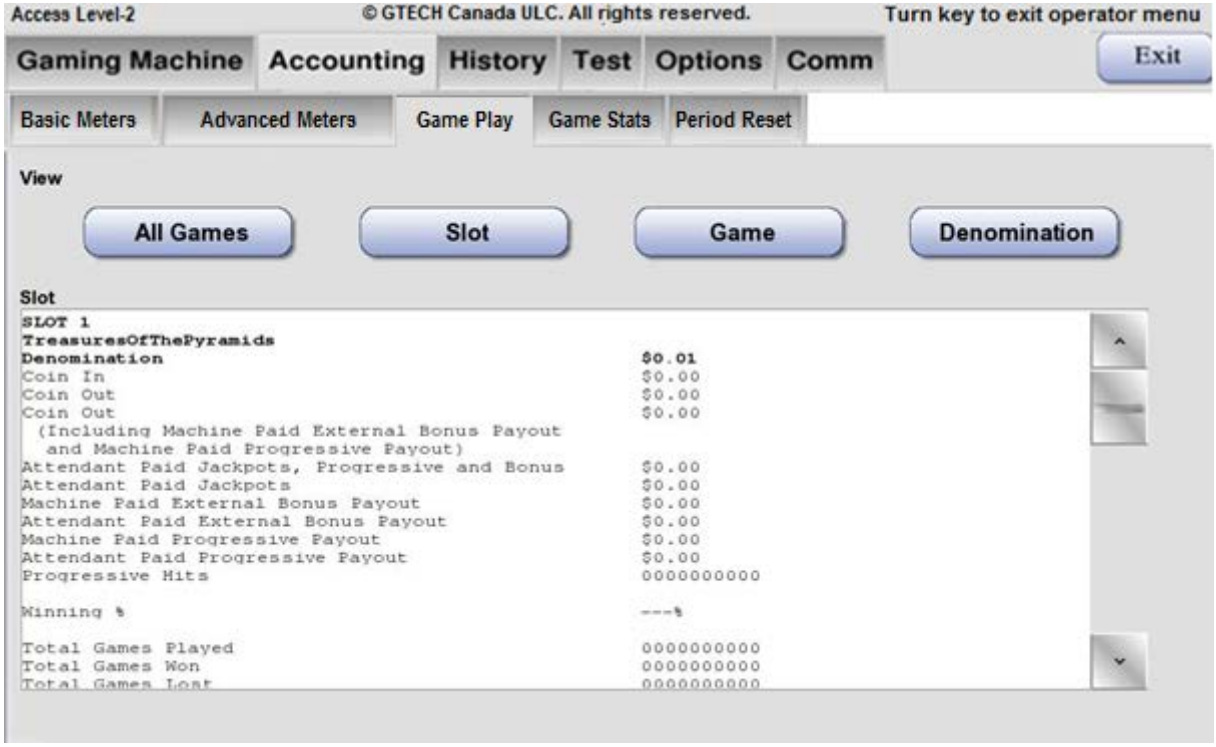

Figure 103 - Slot

The **Game** page displays a summary of accounting data per game title.

The **Export to USB** button saves the log files to a USB device as a text (txt) file. The button will enable once a USB device is connected, and is accessible to all access levels.

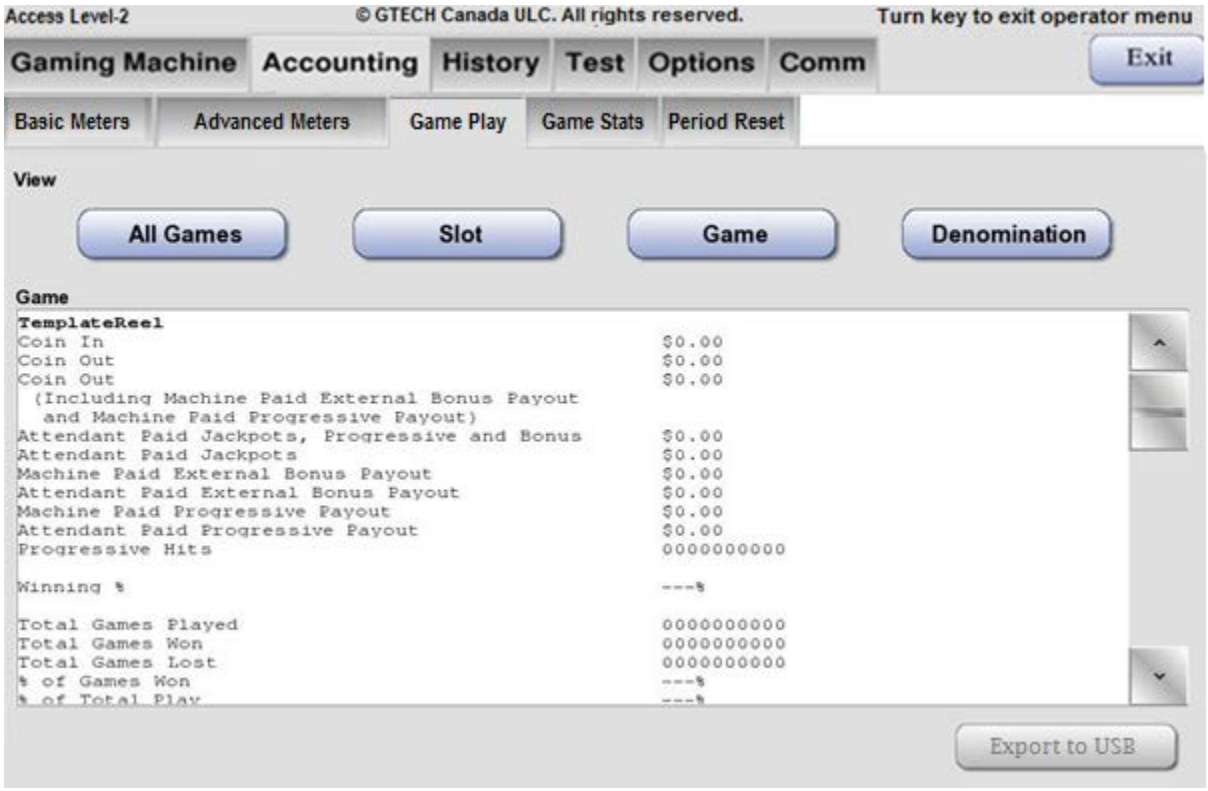

Figure 104 – Game

The **Denomination** page provides an accounting summary based on total denominations configured on the machine.

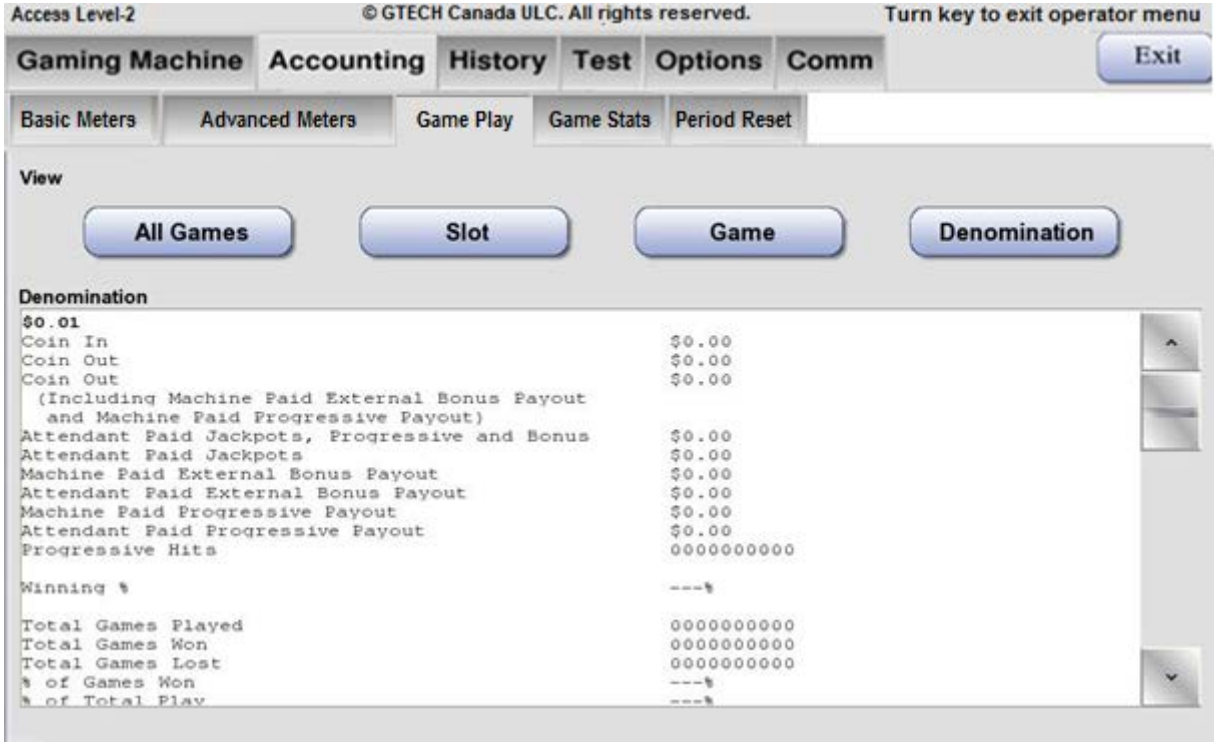

Figure 105 – Denomination

4.4.4. Period Reset

The **Period Reset** sub-tab provides a summary of money wagered, money won, games played, money in, money out, and date and time of current period. All data is divided in two categories: Lifetime and Period.

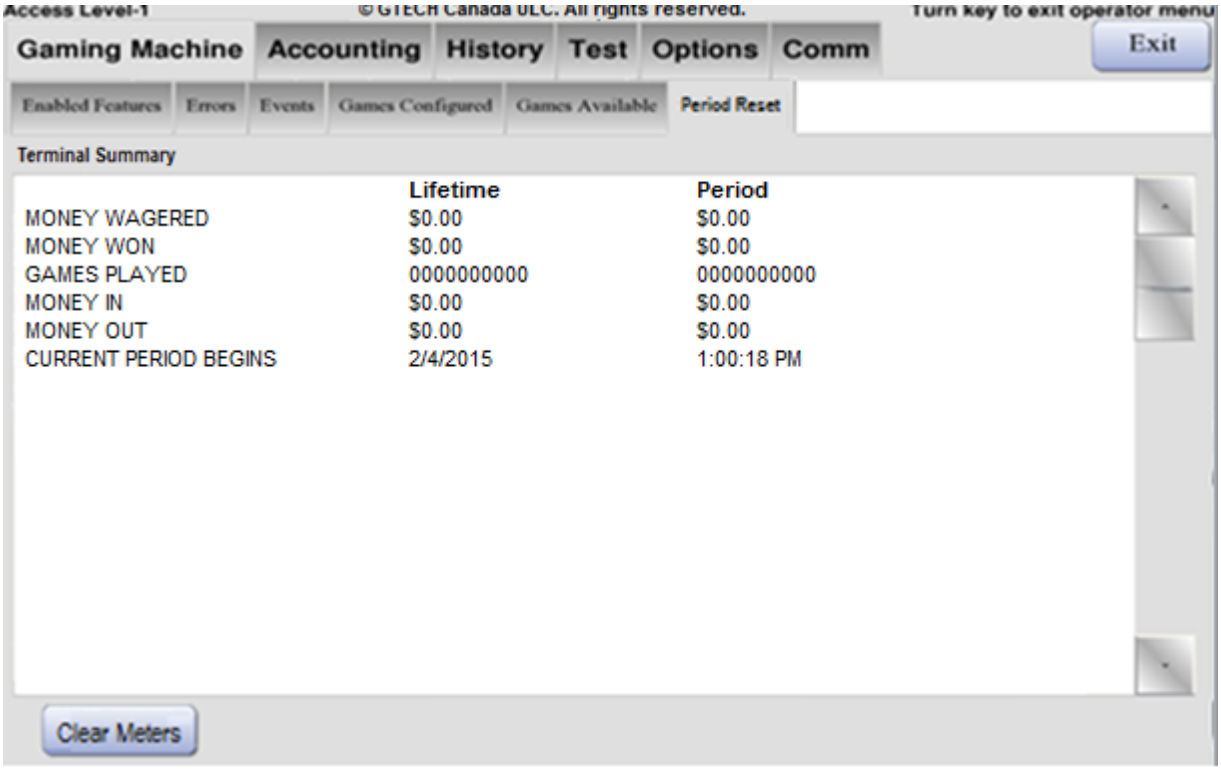

Figure 106 – Period Reset

4.5. History

The **History** tab displays historical information about all transactions, games, and events that occurred on a COAM.

The **History** tab includes the following sub-tabs:

- Games Played
- Bills In
- Coins In
- Tickets Out
- Event Logs
- Hand Pays
- Vouchers In
- Ext. Bonus
- Cashless In
- Cashless Out
- Community Bonus

Figure 107 – History

4.5.1. Games Played

WARNING: When a Master Reset is performed, all information under the History tab will be lost.

The **Games Played** sub-tab displays information about each game that has been played on the COAM. It provides a history of approximately 500 of the last games played, including bonus games, beginning at the latest one. Selecting a game from the list on this page and pressing the **View** button will display a screenshot of the selected game.

If the game entry selected is one from which a Bonus game was triggered, the **Bonus Games** button will become active. Selecting the **Bonus Games** button will display a list of the games that were played during the bonus round. Individual bonus game screens can be viewed in the same manner described above for regular games. From the list of bonus games played, the **Main Games** button can be selected to return to the list of main games.

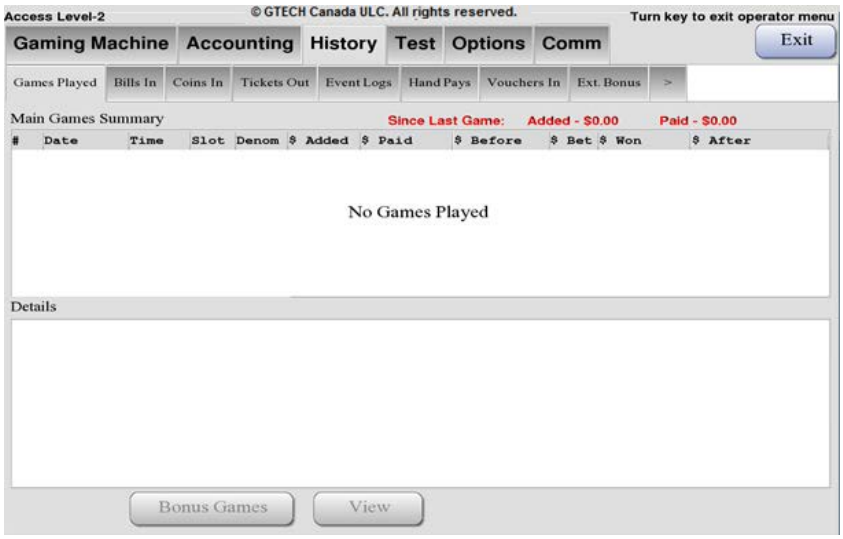

Figure 108 – Games Played

Figure 109 – Games Played History

4.5.2. Bills In

The **Bills In** sub-tab displays information on the last bills accepted by the COAM. It includes the date and time of each accepted bill, and the bill amount, beginning with the latest one.

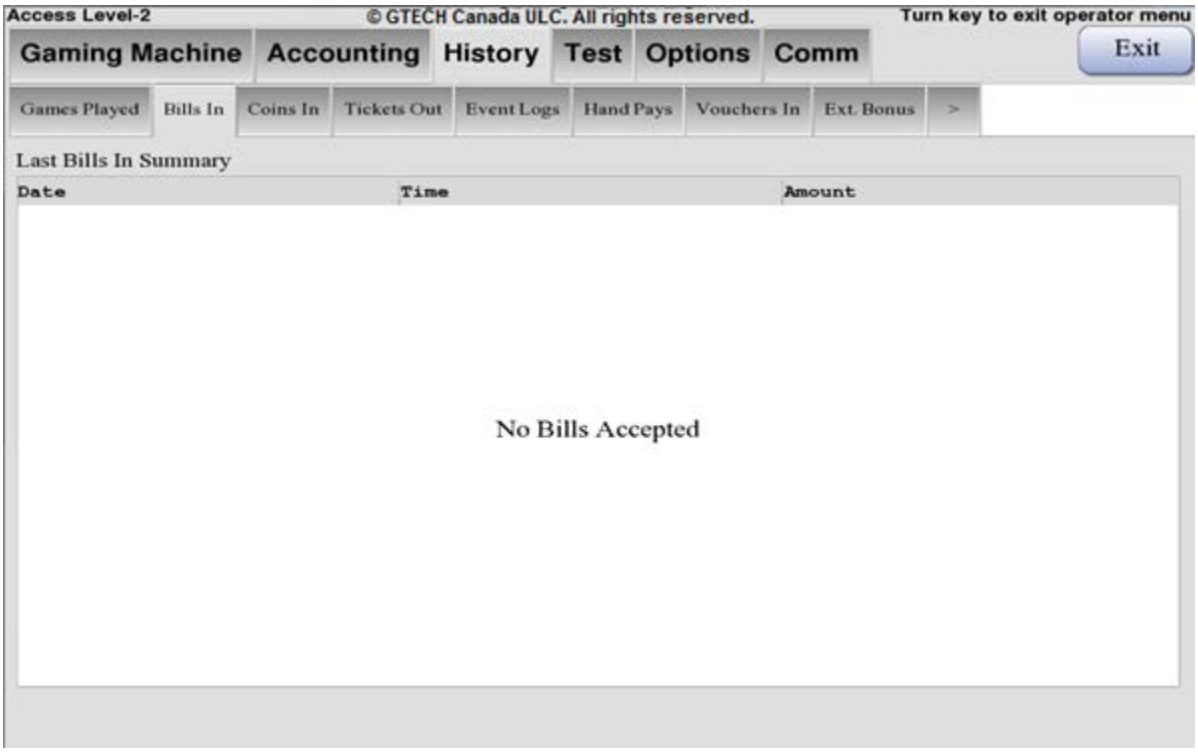

Figure 110 – Bills In

4.5.3. Coins In

The **Coins In** sub-tab displays information on the last coins accepted by the COAM. It includes the date and time of each accepted coin, and the amount, beginning with the latest one.

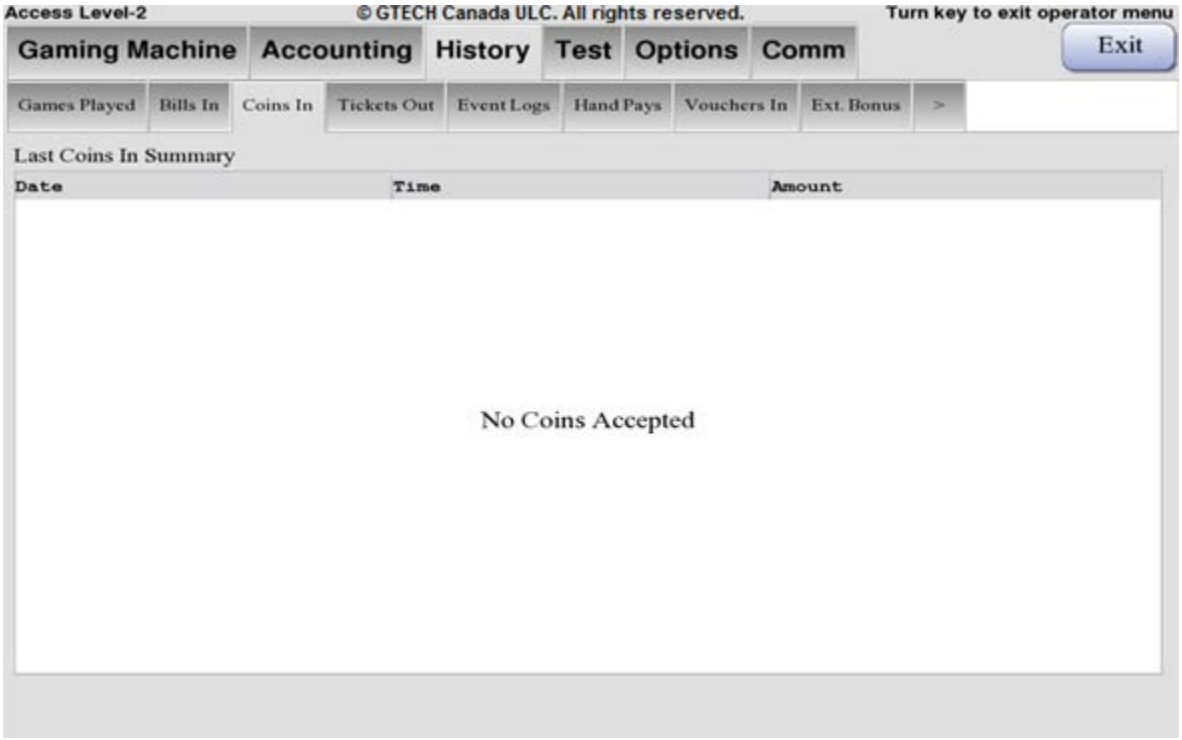

Figure 111 – Coins In

4.5.4. Tickets Out

The **Tickets Out** sub-tab displays the ticket number, date, time, amount, and validation ID of the last 100 tickets printed by the COAM.

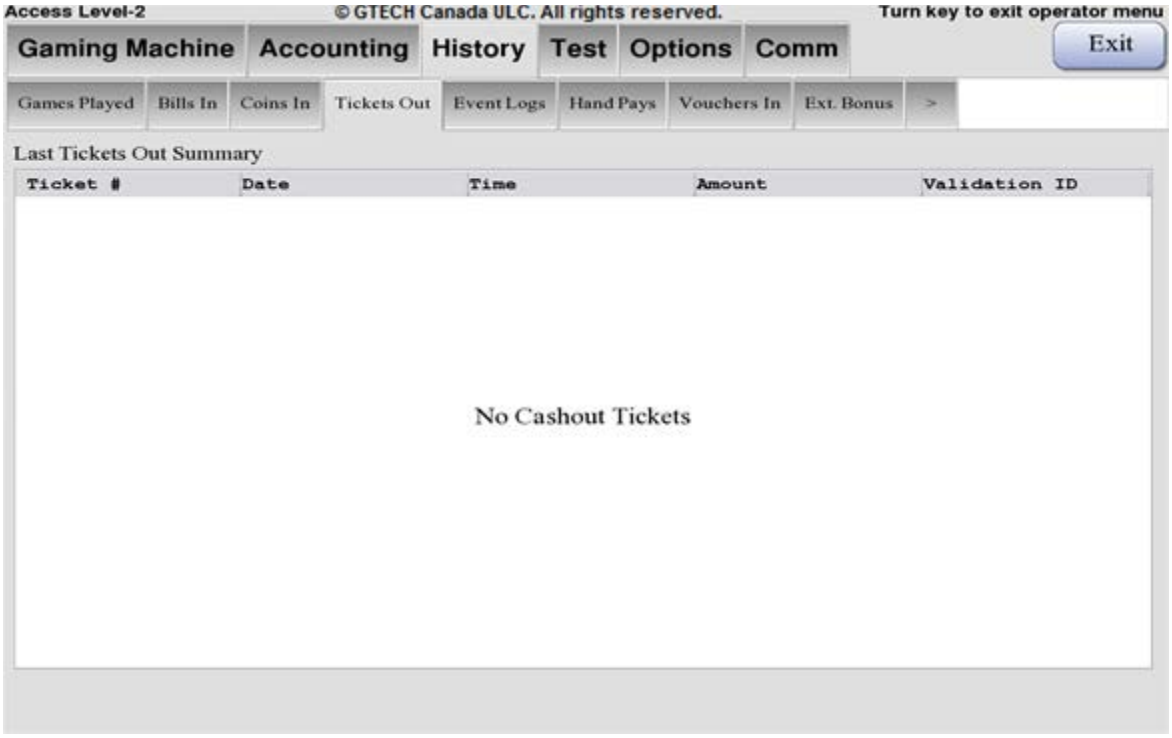

Figure 112 – Tickets Out

4.5.5. Event Logs

The **Event Logs** sub-tab displays a summary of all the events that have occured on the machine. Information includes date, time and description of each event.

Events can be viewed by category by selecting the appropriate button on the left side of the screen:

- Most Recent Events
- General
- Debug
- Money In/Out
- Game Play
- Interaction

By default, the **Most Recent Events** page is displayed.

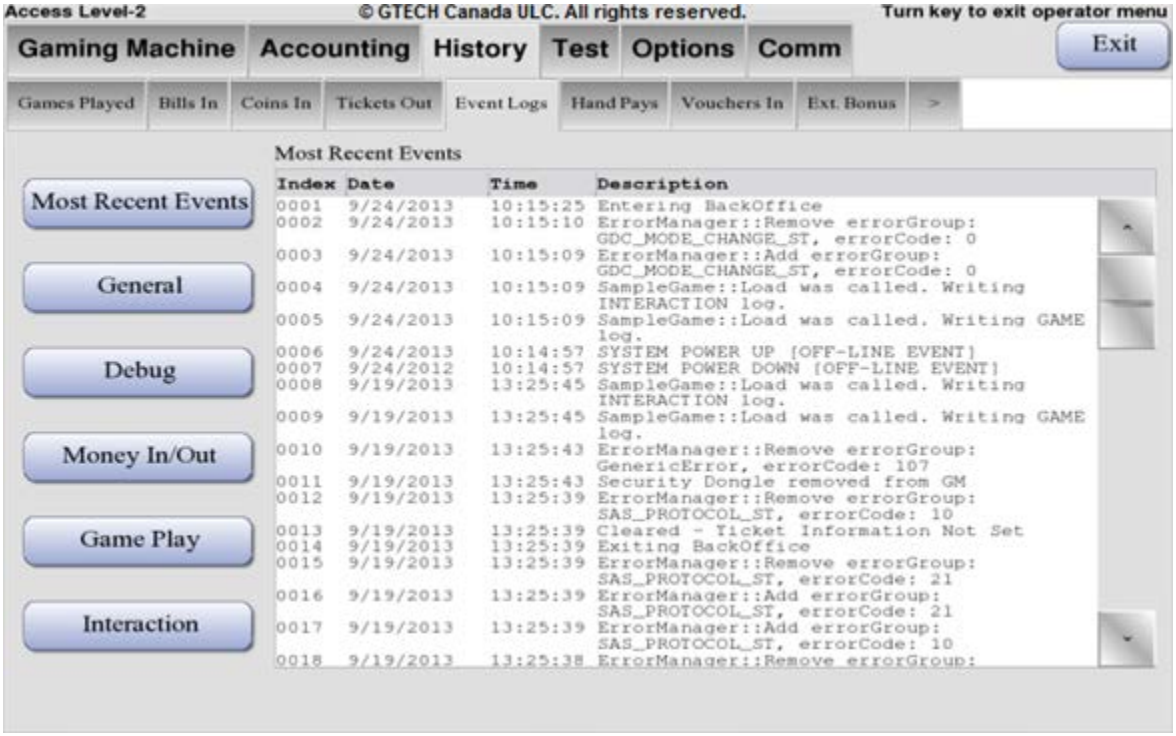

Figure 113 – Most Recent Events

Selecting the **General** button displays information on events such as door accesses, tech and audit key turns, general peripheral errors, and menu accesses.

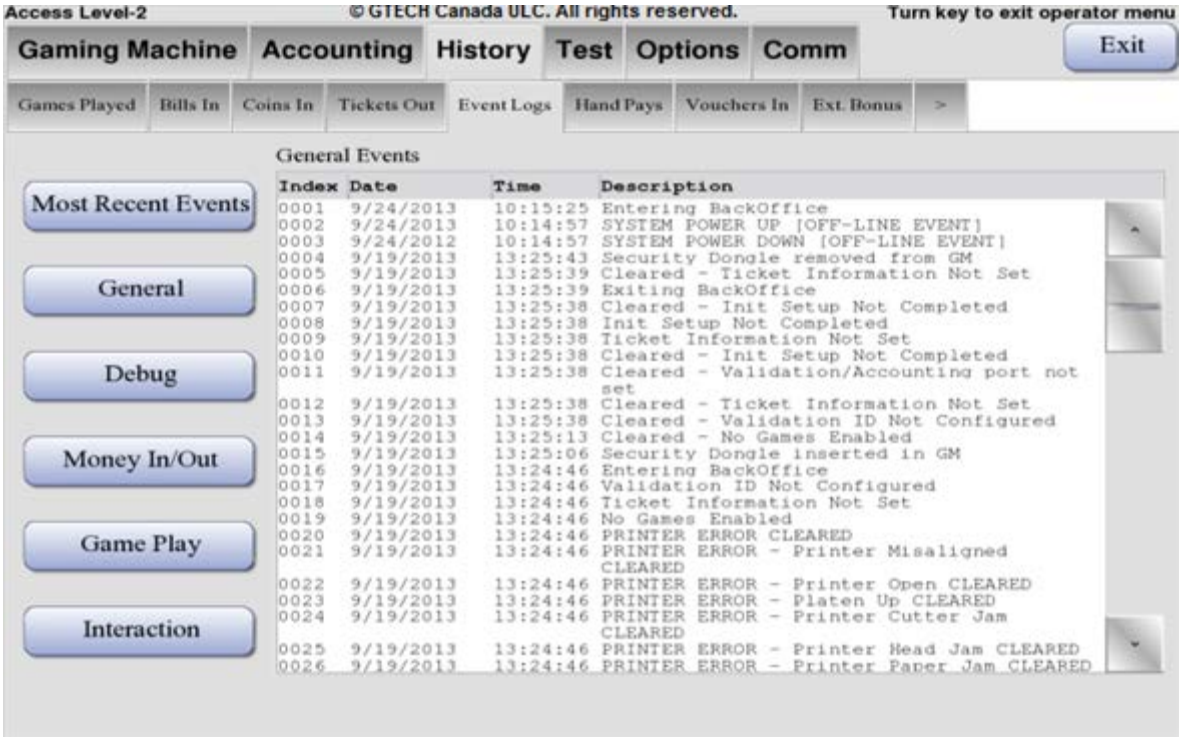

Figure 114 – General Events

Selecting the **Debug** button displays information on errors in the software. This page is used by programmers/testers to rectify issues with the software. It is not intended to be used by Technicians or Operators.

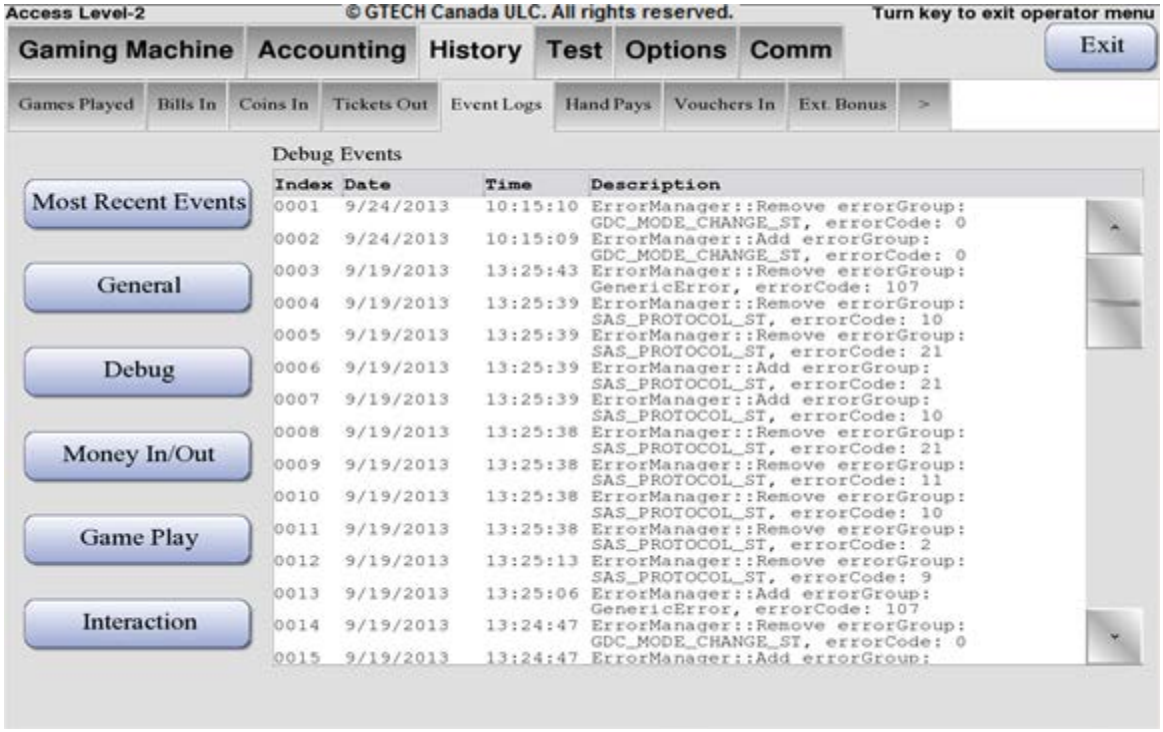

Figure 115 – Debug Events

Selecting the **Money In/Out** button displays information on all the money added to or withdrawn from the credit balance on the COAM. This includes money or vouchers inserted, cashout tickets printed, electronic transfers in or out, as well as wager amounts withdrawn and win amounts added.

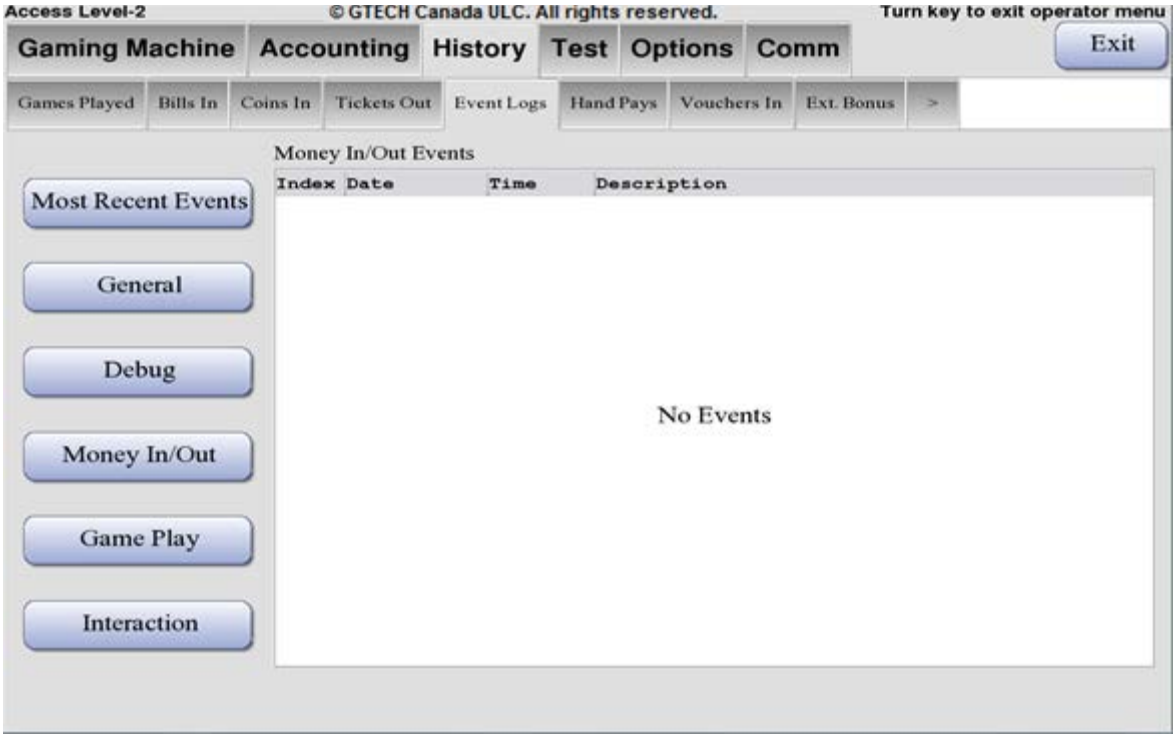

Figure 116 – Money In/Out Events

Selecting the **GamePlay** button displays information on all of the individual games played on the COAM.

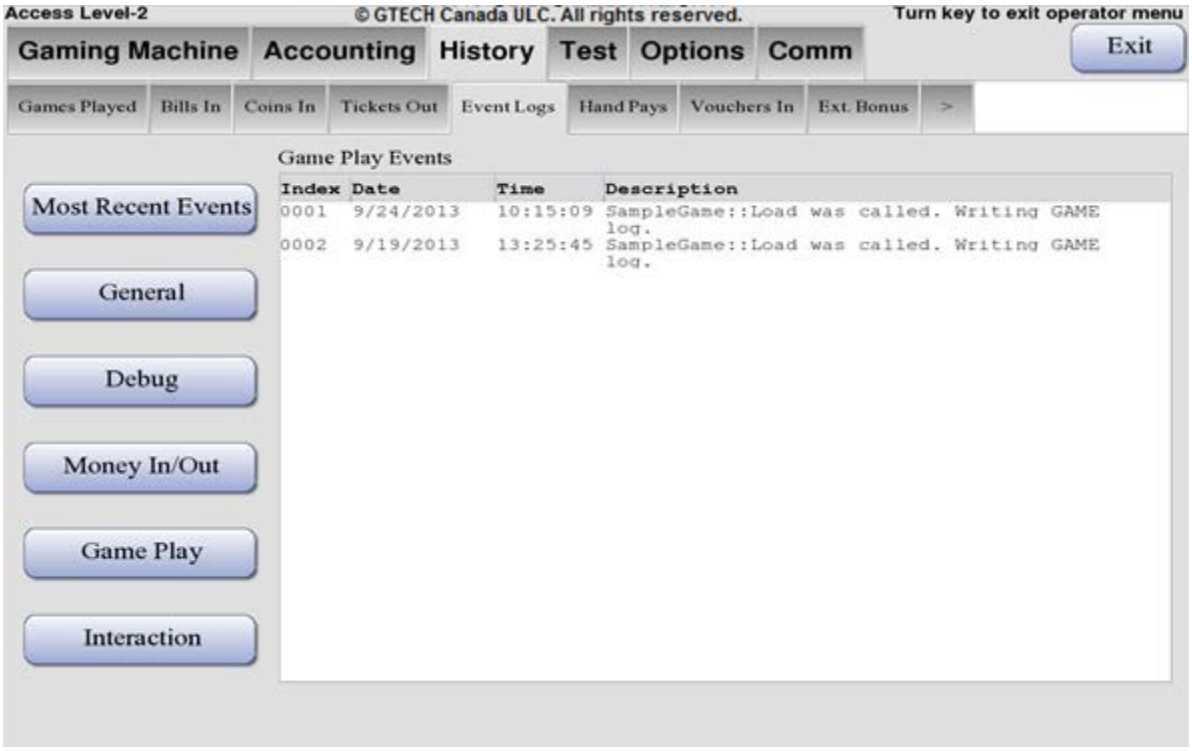

Figure 117 – GamePlay Events

Selecting the **Interaction** button displays all the player interactions such as game selection.

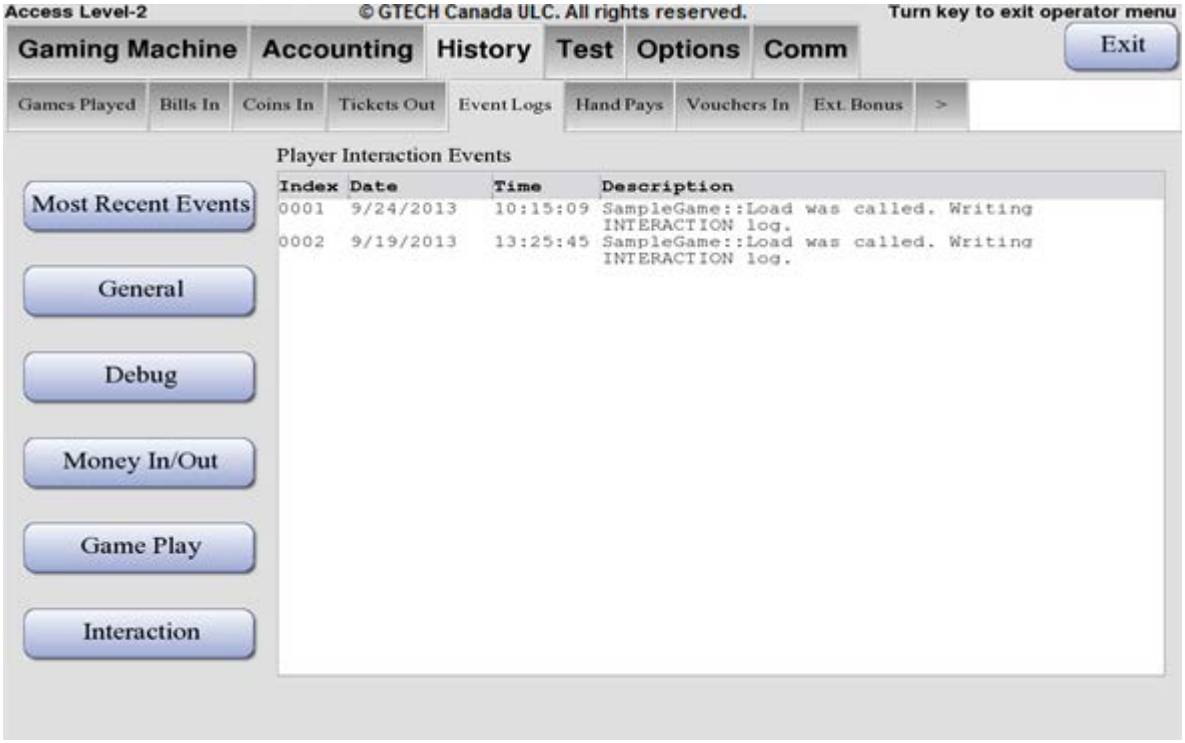

Figure 118 – Interaction Events

4.5.6. Hand Pays

The **Hand Pays** sub-tab displays the last 100 hand pays made by the machine. Data includes: ticket number, date, time, amount, type, and the last four digits of the Validation ID number. The last four digits of the Validation ID number are always displayed with or without hand pay receipts enabled.

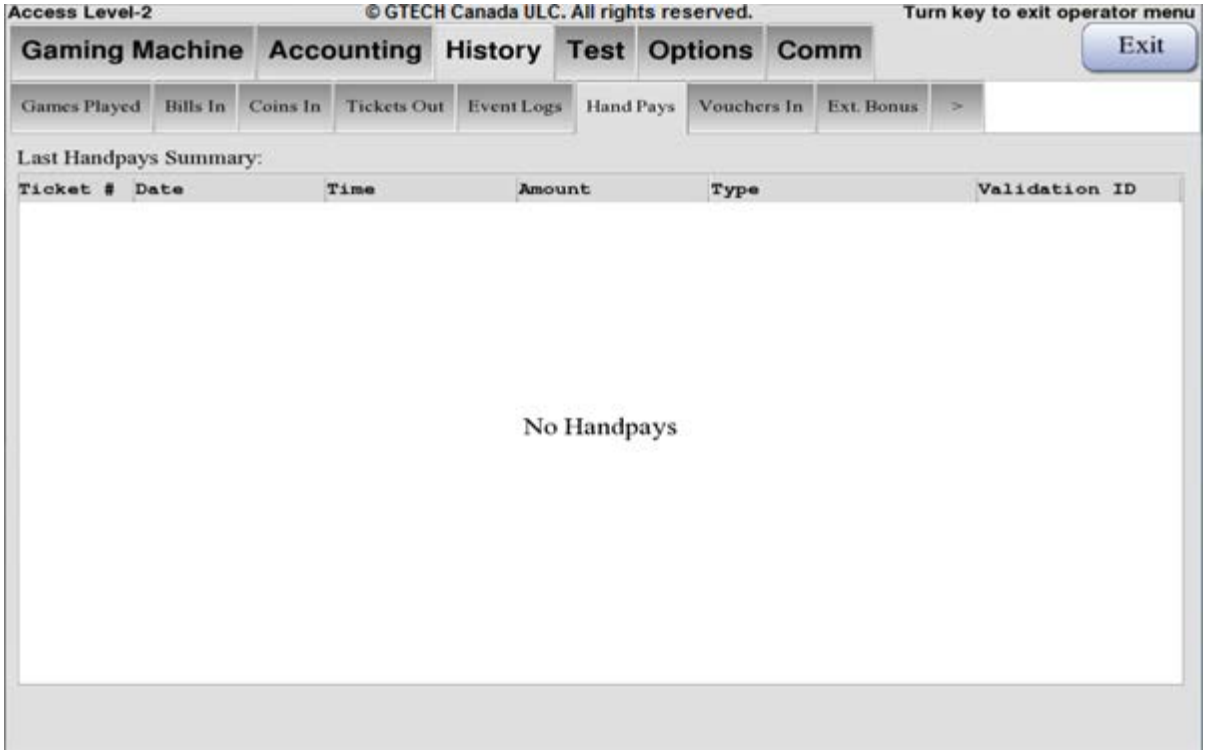

Figure 119 – Hand Pays

4.5.7. Vouchers In

The **Vouchers In** sub-tab displays information regarding the last 100 vouchers accepted. Data includes: date, time, amount, and the last four digits of the Validation ID number.

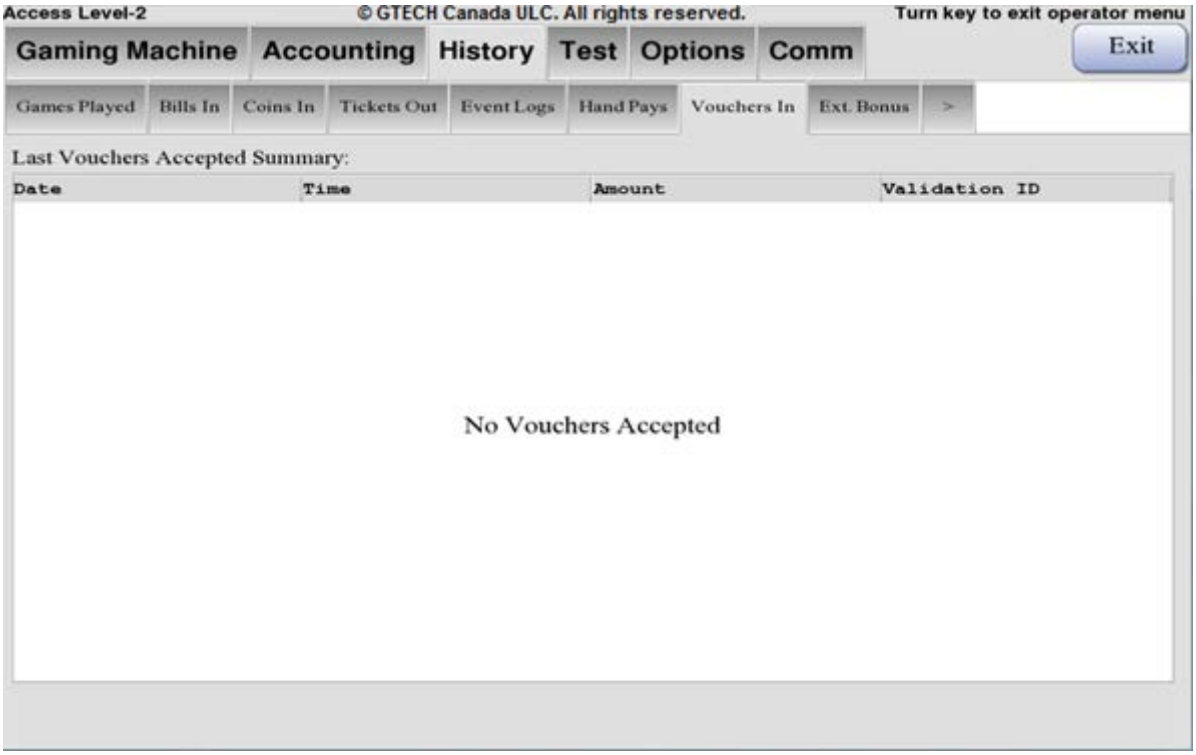

Figure 120 – Vouchers In

4.5.8. Ext. Bonus

The **Ext. Bonus** sub-tab displays information about the last 100 external bonuses sent to the COAM by external sources (i.e. host system). Data includes: date, time, amount, and type of each external bonus. In addition to External Bonuses, AFT Bonuses, AFT Jackpots, and Multiplied Jackpots are displayed.

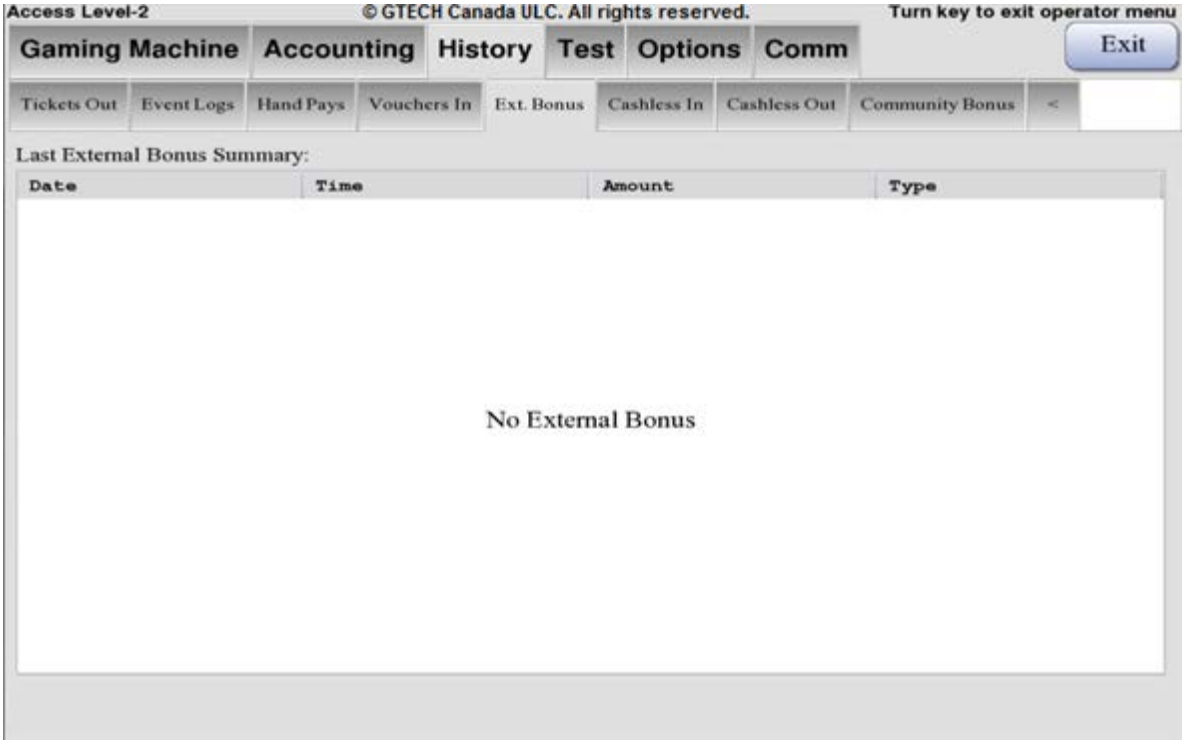

Figure 121 – Ext. Bonus

4.5.9. Cashless In

The **Cashless In** sub-tab displays information regarding the last 100 cashless transfers into the COAM (cashless refers to credits or money put in the machine electronically). Data includes: date, time, amount, type, and the ID of each transfer.

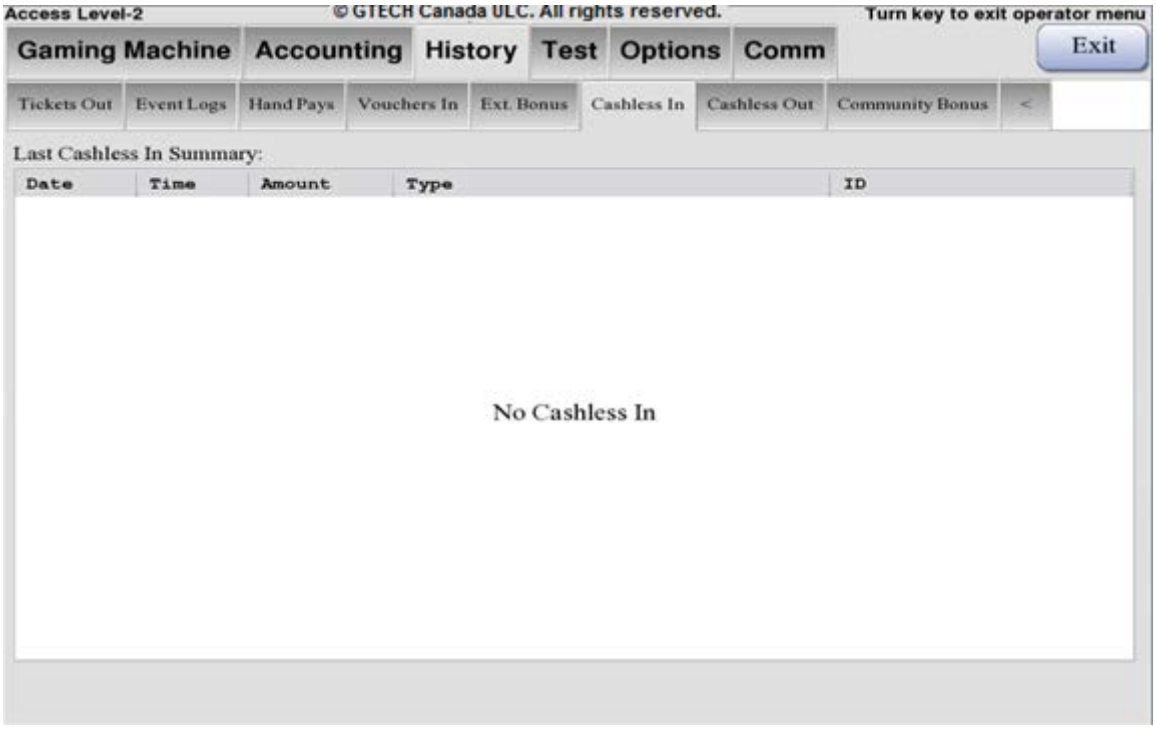

Figure 122 – Cashless In

4.5.10. Cashless Out

The **Cashless Out** sub-tab displays information regarding the last 100 cashless transfers out of the COAM. Data includes: date, time, amount, type, and ID of each transfer.

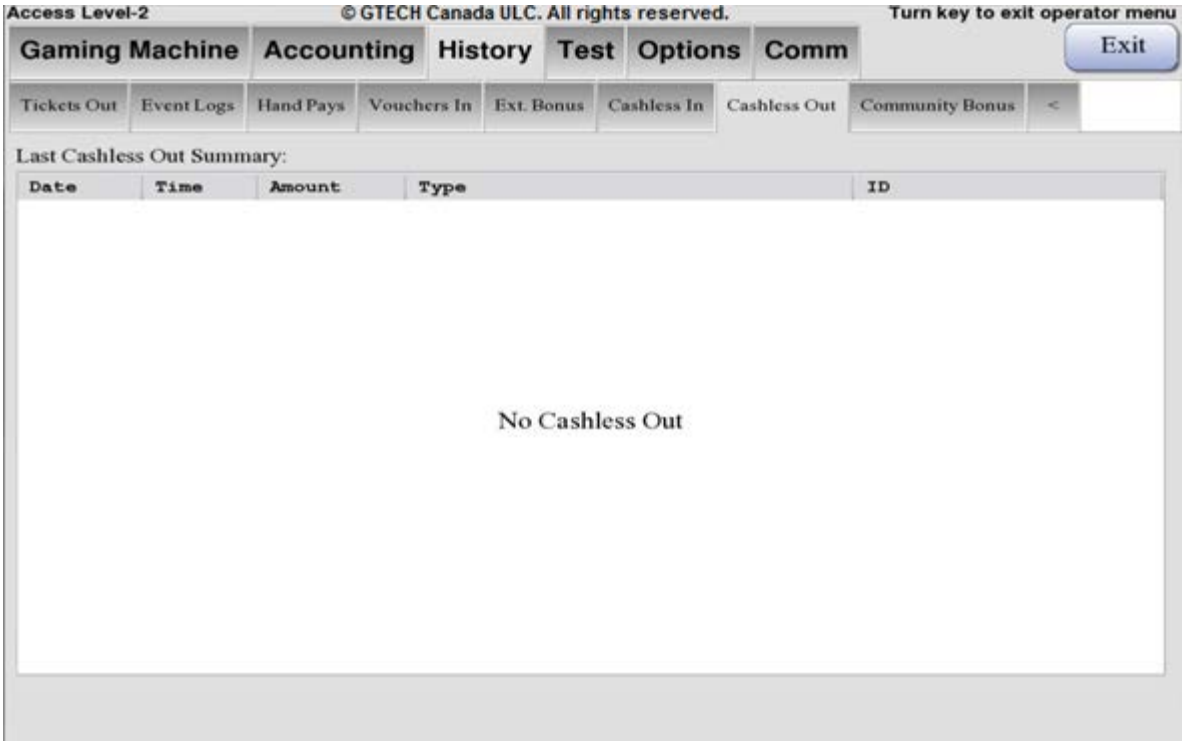

Figure 123 – Cashless Out

4.5.11. Community Bonus

The **Community Bonus** sub-tab displays historical community bonus information. Information is only displayed when the COAM is participating in a linked gaming network. Data includes: date, time, amount, and type.

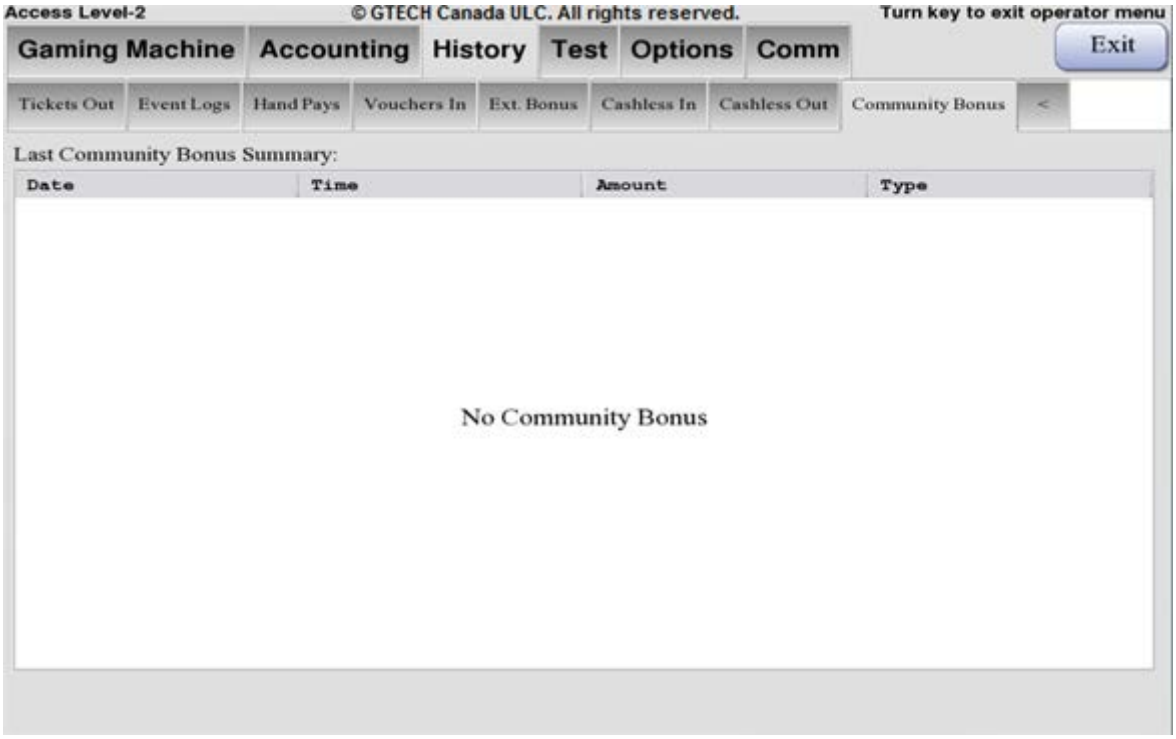

Figure 124 – Community Bonus

4.6. Test

The **Test** tab is used for diagnostic purposes and enables the user to test various devices.

The **Test** tab includes the following sub-tabs:

- Paytable Test
- Batteries
- Buttons
- Candle and Switches
- Devices
- Speakers
- Belly Lights
- Touch Screen
- Marquee Bezel
- NVRAM
- Doors
- RNG Test

Figure 125 – Test

4.6.1. Paytable Test

The **Paytable Test** sub-tab is used to demonstrate main game outcomes including the bonus trigger.

Press the **Start Paytable Test** button to launch the game in test mode. Users can then add credits to the bank, generate specific spins and outcomes. No meters are recorded while in Paytable Test mode.

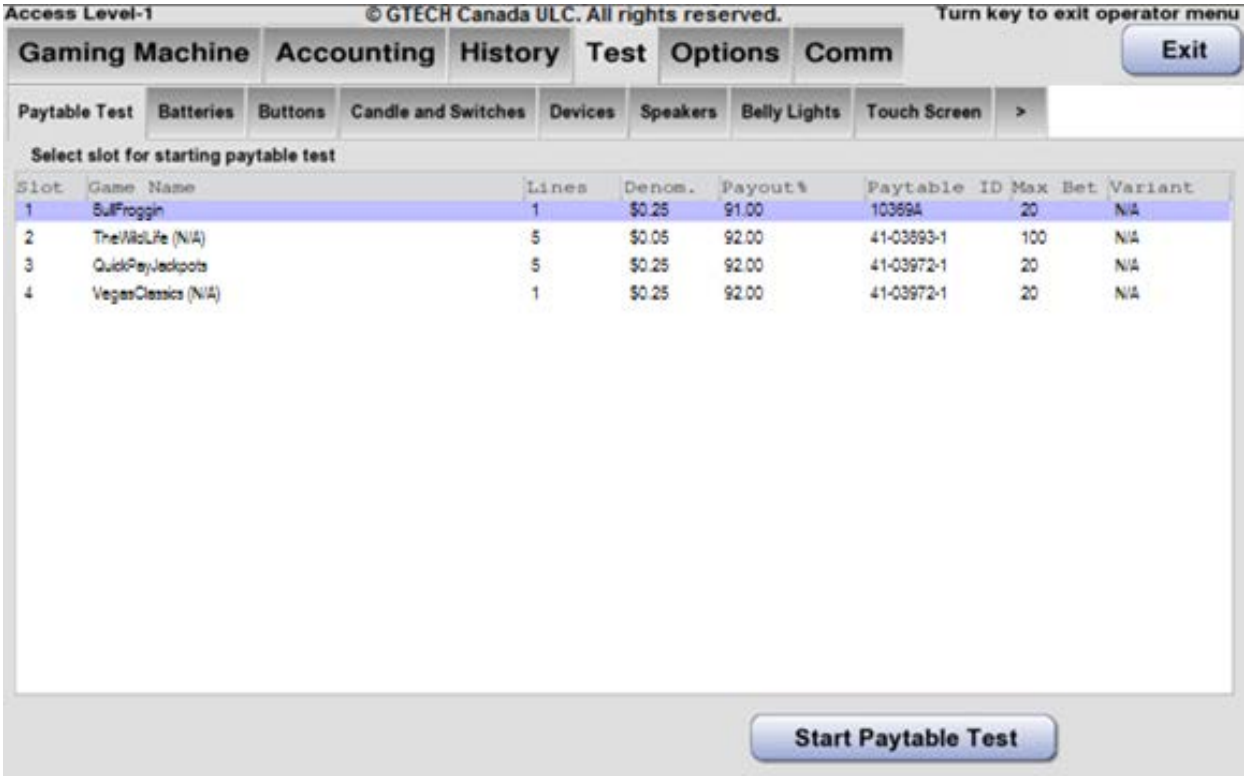

Figure 126 – Paytable Test

4.6.2. Batteries

NOTE: **Batteries can only be replaced by replacing the Logic Box.**

The **Batteries** sub-tab allows the user to perform a status check of each of the machine's batteries. The pane displays the status of each battery, including the battery type, voltage, fail point, and test result.

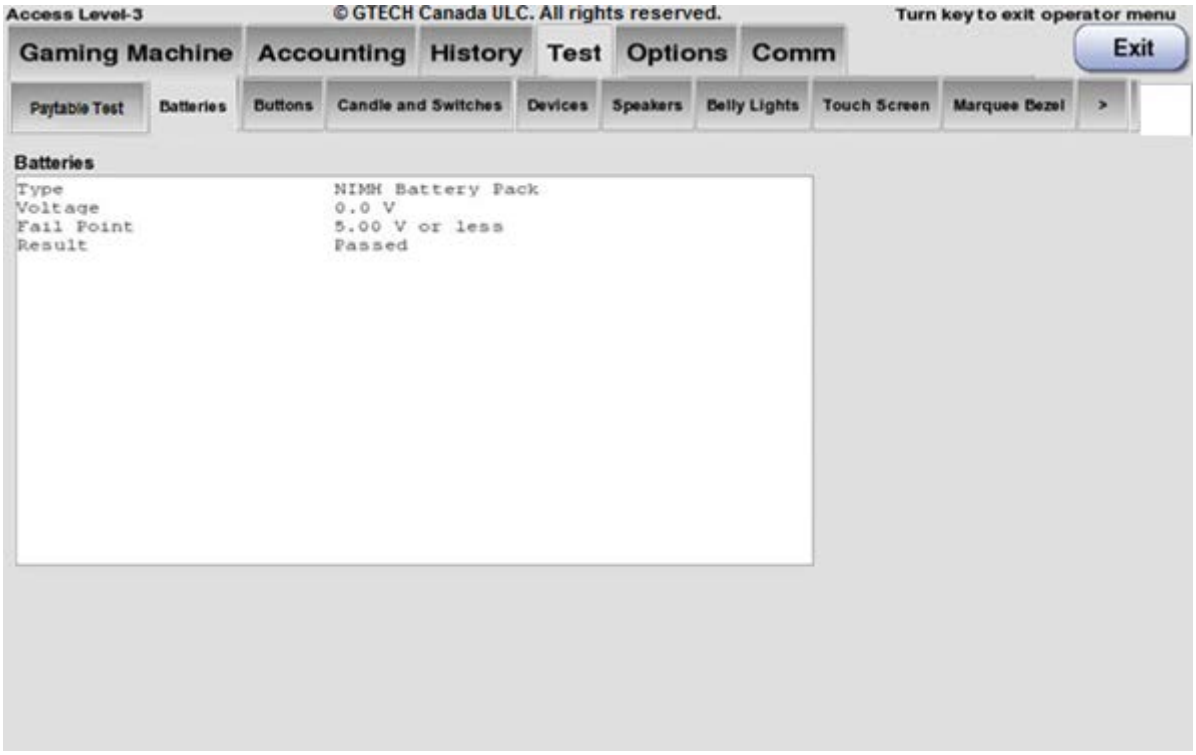

Figure 127 - Batteries

4.6.3. Buttons

NOTE: The onscreen button panel will be determined by what USB Button Board is installed on the COAM.

The **Buttons** test function enables the user to test the mechanical buttons installed on the front of the COAM. The status of each button is displayed in the bottom pane (Button Status). The numbers of the buttons on the button board graphic display correspond to the button numbers in the Button Status list below.

To test the buttons, press the button you wish to test on the mechanical button board and observe the **Button Status** pane. The Position indicated in the list for the corresponding button should change to DOWN and the Lamp status indicated should change to OFF.

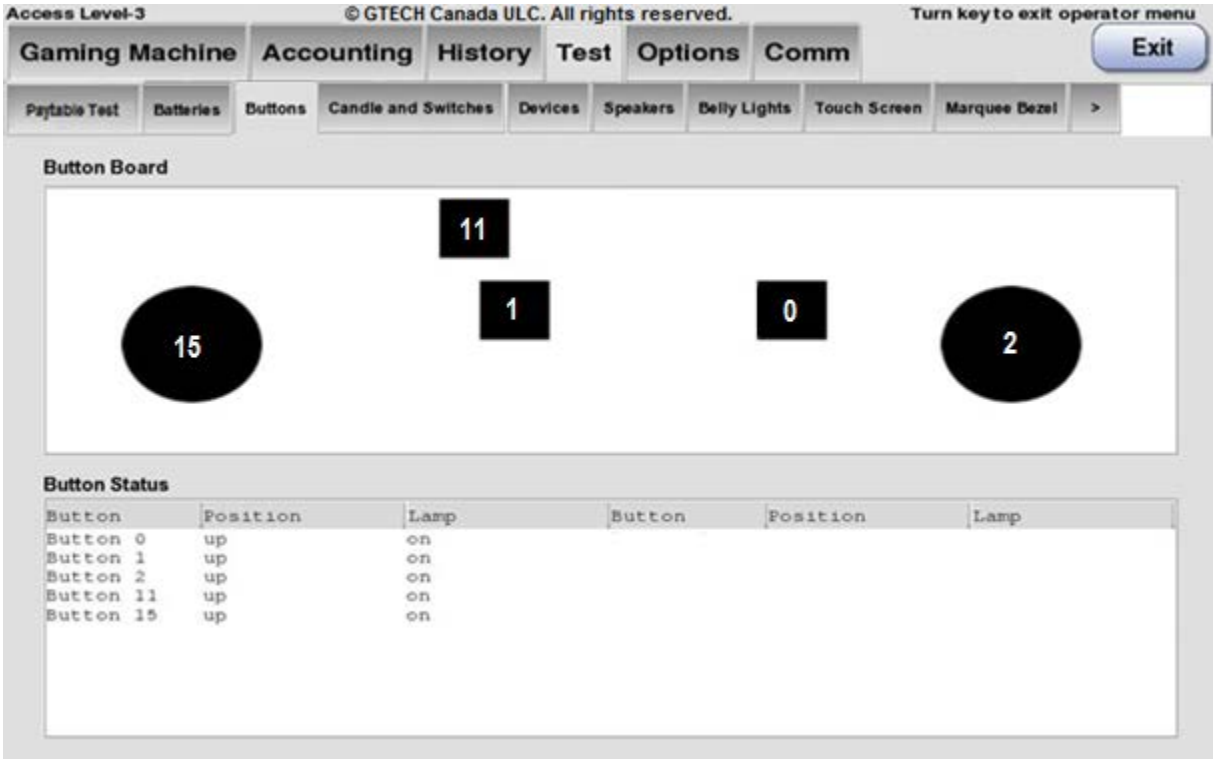

Figure 128 – Buttons

4.6.4. Candle and Switches

NOTE: The Candle test is only functional when a Candle is present on the COAM.

The **Candle and Switches** sub-tab enables testing of the candle on the top of the machine, and the technician and audit key switches.

To test the Candle, select either the **Top Section, Middle Section** or **Bottom Section** check box and the corresponding section of the candle will light up indicating it is working.

2-Tier Candle: Top Section, Bottom Section
3-Tier Candle: Top Section, Middle Section, and Bottom Section

To test the key switches, turn the Technician and the Audit key switches while observing the **Key Switch Status** display. The status indicated for each switch should change to **ON** when the corresponding key is turned.

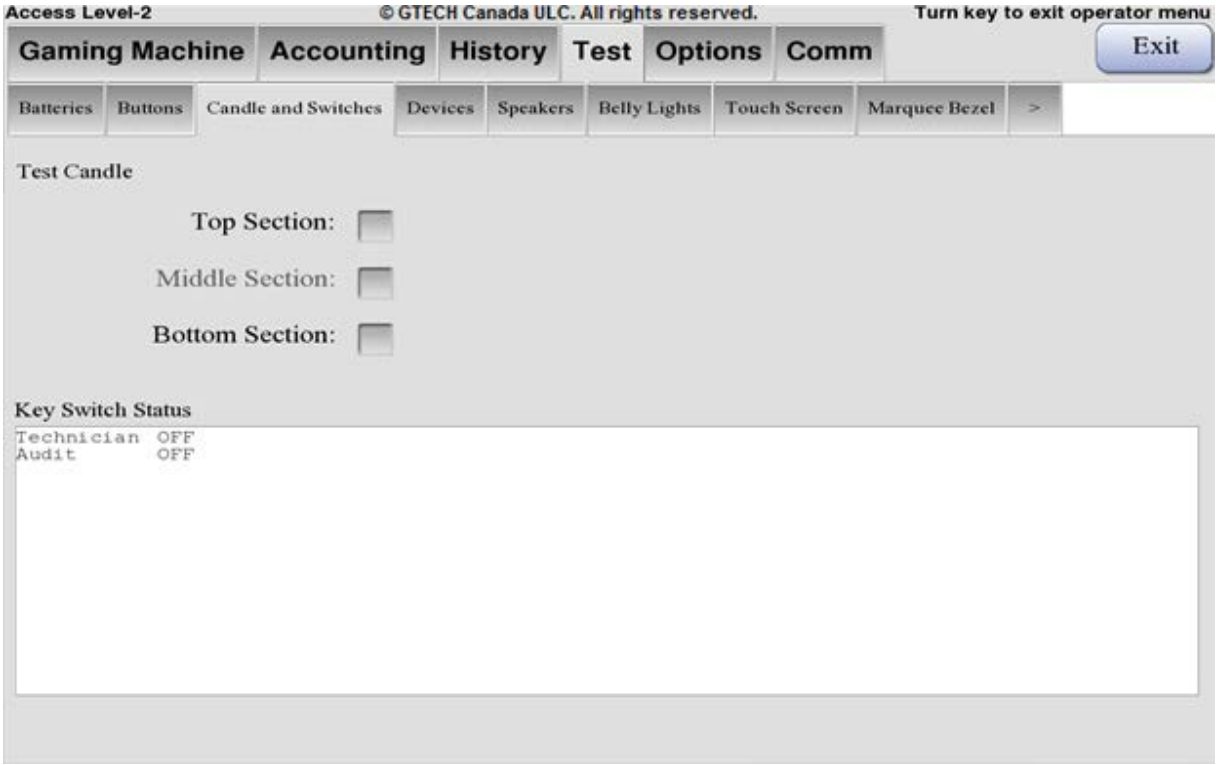

Figure 129 – Candles and Switches

4.6.5. Devices

NOTE: Testing the Bill Validator will not affect the financial data, because the tested bill will never be pushed into the stacker box.

NOTE: Coin Validator, and Hopper are not available for this configuration.

The **Devices** sub-tab provides testing for the **Bill Validator**.

The **Bill Validator** page is displayed with a status of IDLE. To test the Bill Validator, insert a valid bill into the machine and observe the display. If successful, the indicated status will change to CASH_WAITING(X) where “X” represents the denomination of the bill. For example, for a valid $5 bill the status would show CASH_WAITING (5). When the test is complete, the test bill will be ejected from the device and can be recovered.

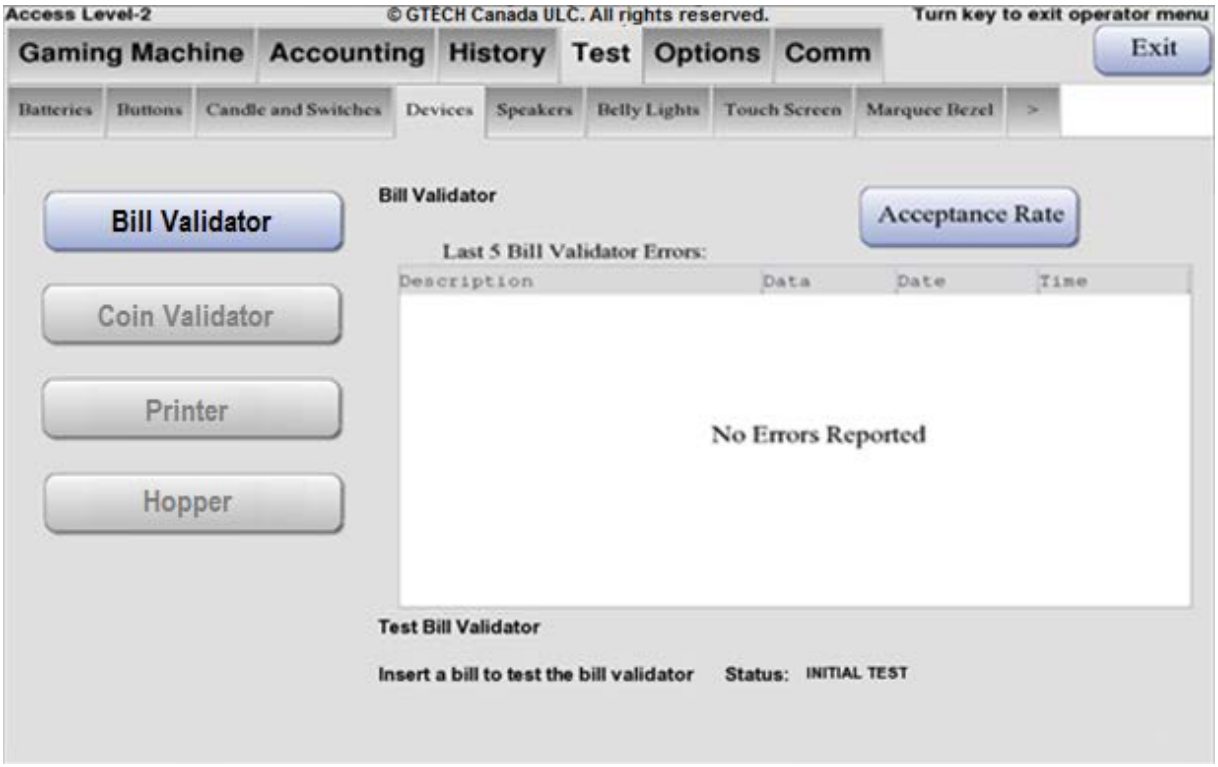

Figure 130 – Devices, Bill Validator

When the user selects the **Acceptance Rate** button, the pane will display how many bills of each bill denomination has been accepted.

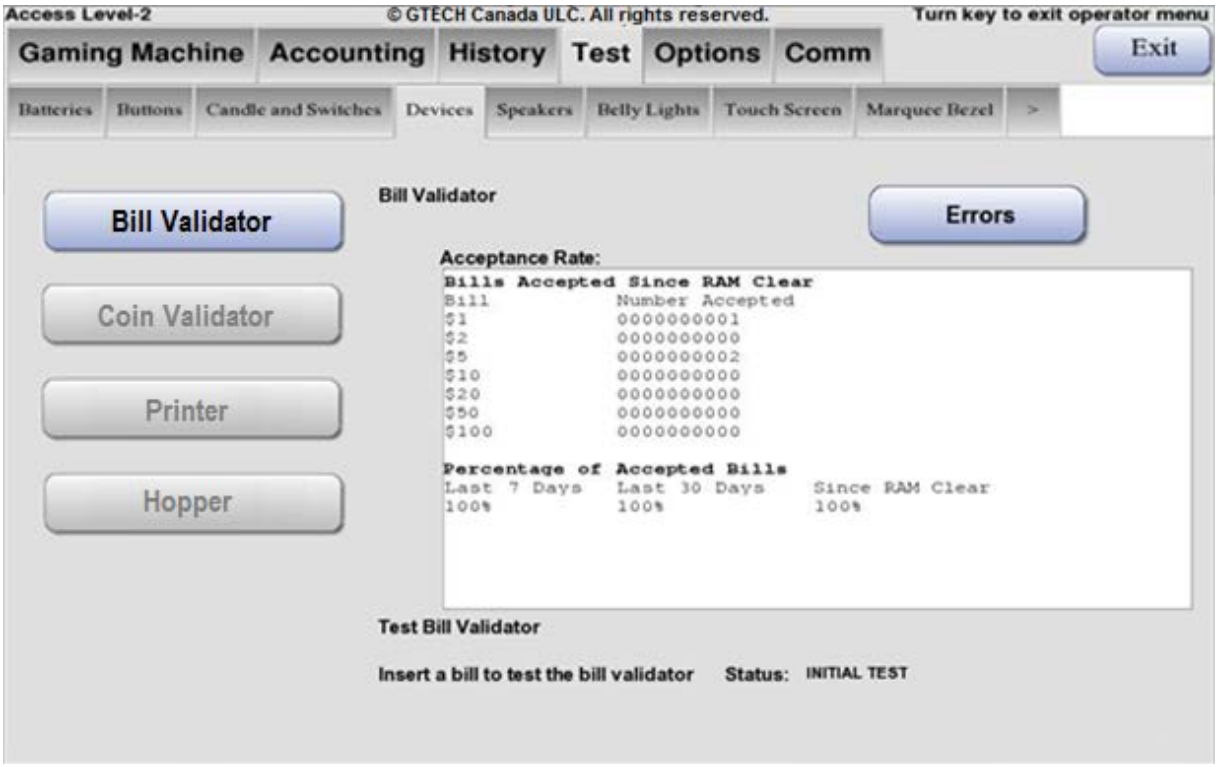

Figure 131 – Bill Validator – Acceptance Rate

The **Printer** test page allows the user to test the functionality of the printer and to view all current error conditions related to it. Initially the Test Result will be indicated as NOT TESTED.

To test the printer, select the **Print Test Ticket** button and observe the display. A test ticket should be printed. When printing is complete, the Test Result indicated should change to PASSED.

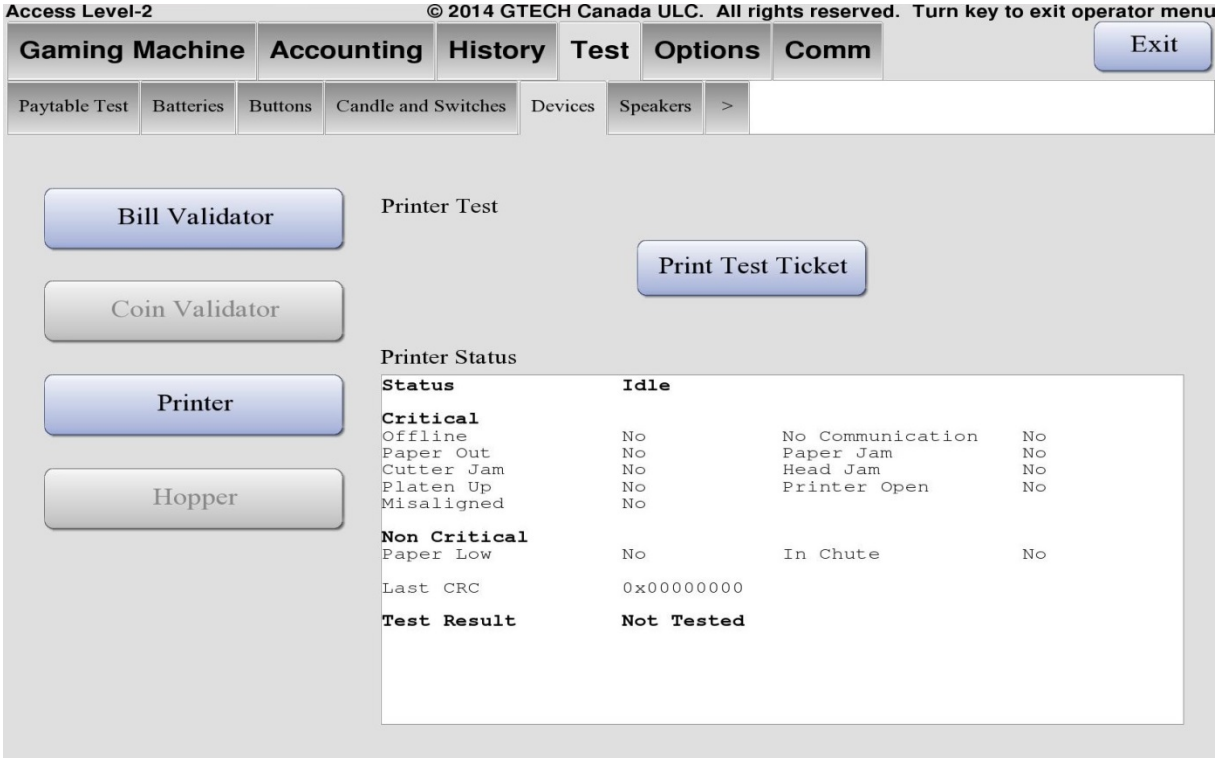

Figure 132 – Printer

4.6.6. Speakers

The **Speakers** sub-tab allows the user to test the speakers installed on the COAM. Select the speaker from the drop-down list and press the Test button.

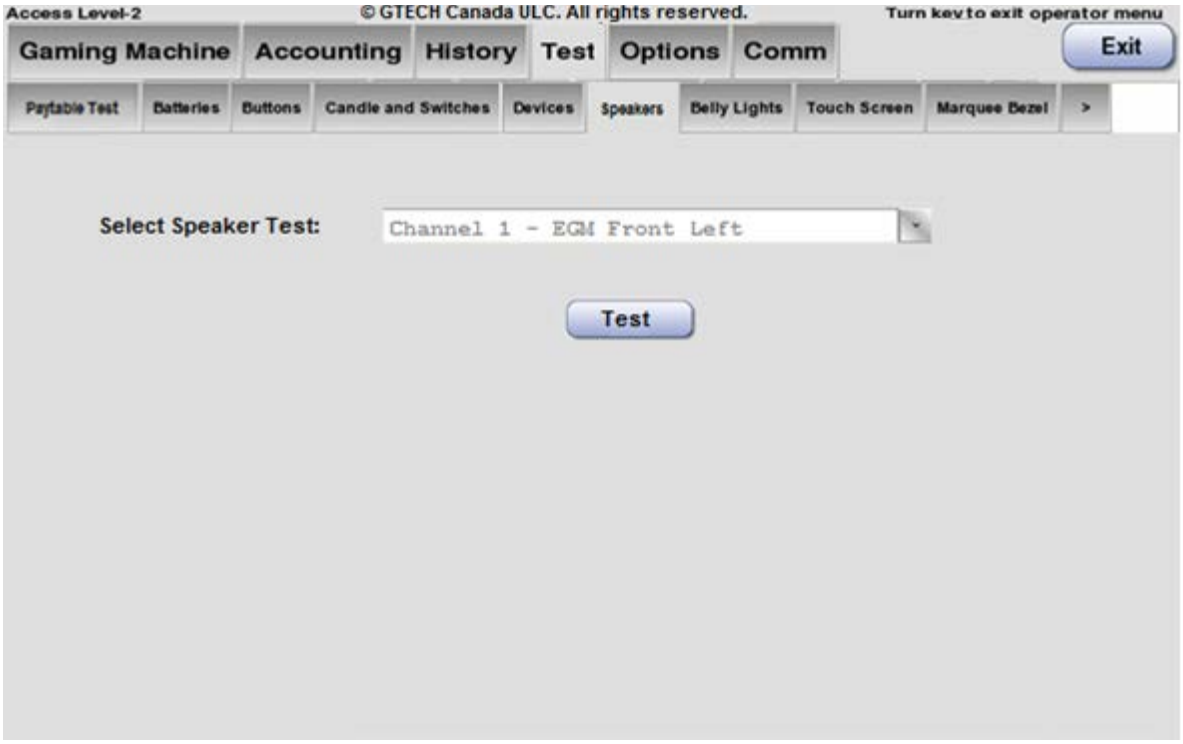

Figure 133 – Speakers

4.6.7. Belly Lights

The **Belly Lights** sub-tab allows the user to test the colors of the Belly lights on the door of the machine. The intensity of each color can be varied by adjusting the corresponding slider button. Selecting the **Clear** button stops the test and turns the lights off.

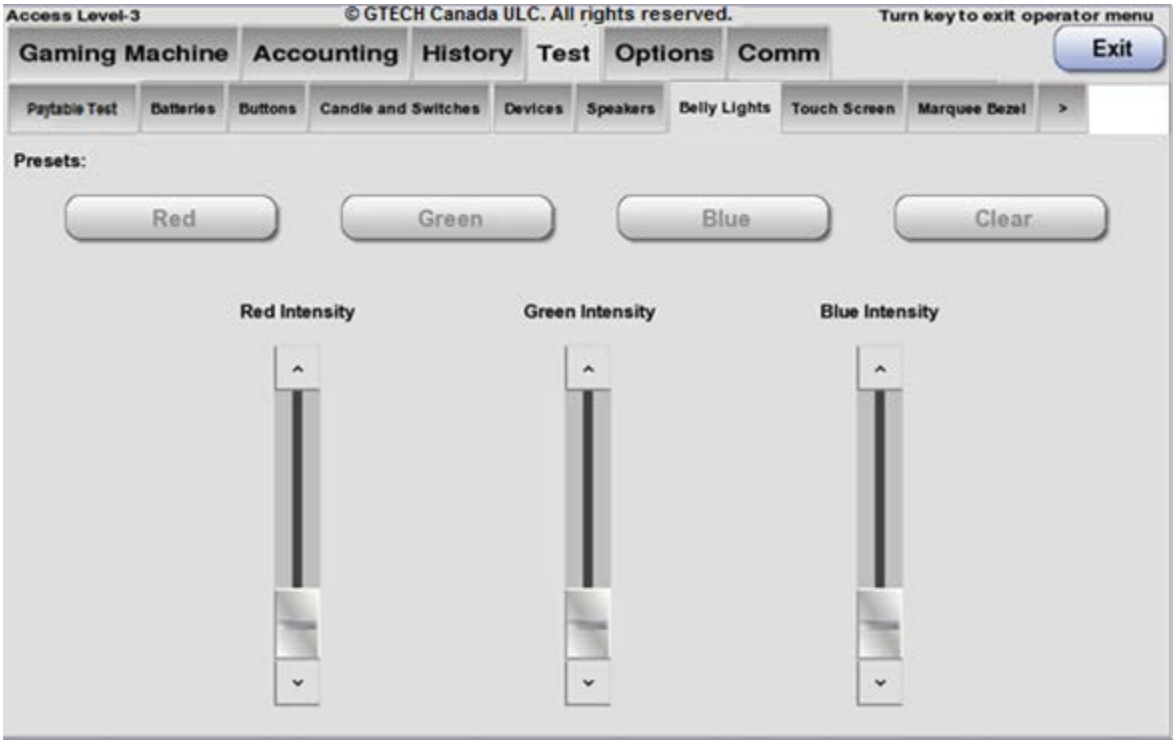

Figure 134 – Belly Lights

4.6.8. Touch Screen

The **Touch Screen** sub-tab allows the user to test the functionality of the touch screen. Touch the screen to begin the test. With the screen in test mode, each time the screen is touched a **plus sign** (crosshair) appears in that location and its exact position on the screen is provided at the top of the display in terms of horizontal (X) and vertical (Y) coordinates. To exit the test mode and return to the back office menus select the **Exit** button.

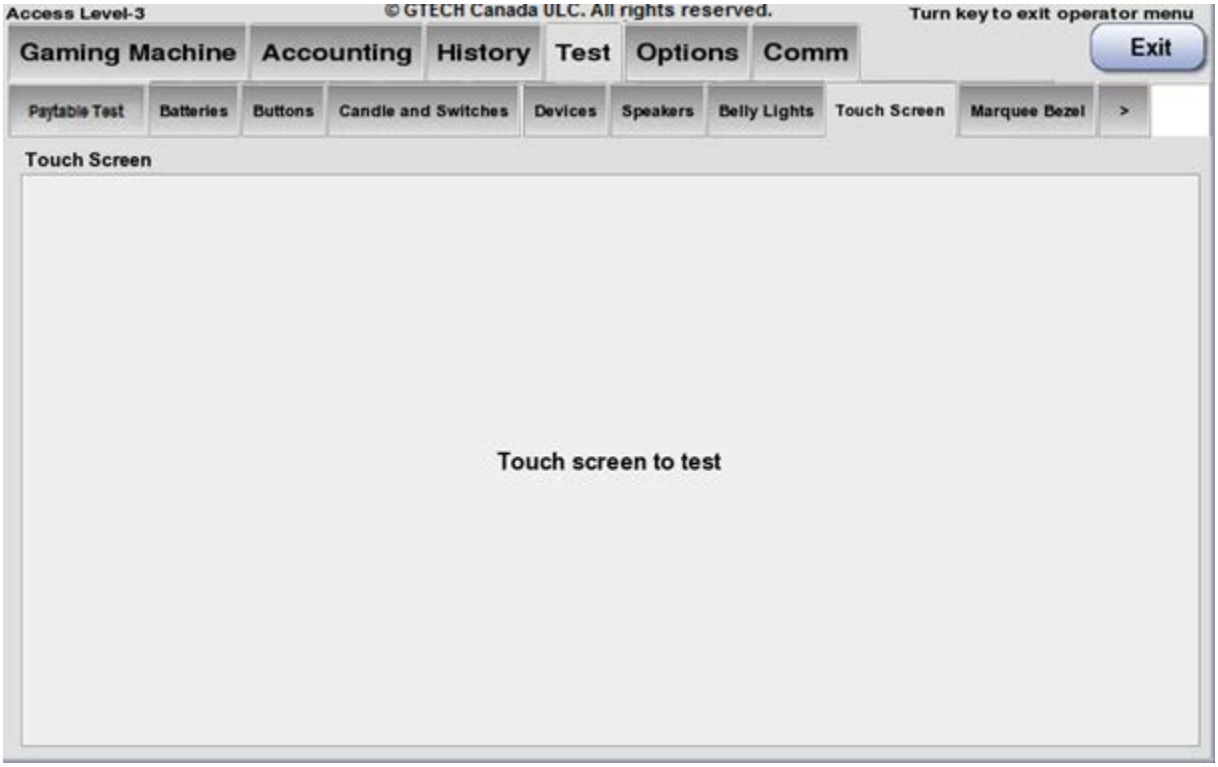

Figure 135 – Touch Screen

Figure 136 – Touch Screen Test Mode

4.6.9. Marquee Bezel

The **Marquee Bezel** sub-tab allows the user to test the lights that frame the monitors.

Technical information about the different marquee bezels installed on the COAM is provided in the pane.

To test, select the **Region** of the marquee bezel from the drop-down list.

Select one of the color buttons (red, green, blue). This will cause the lights to change to the color selected.

Selecting the **Clear All** button ends the test and turns off the lights.

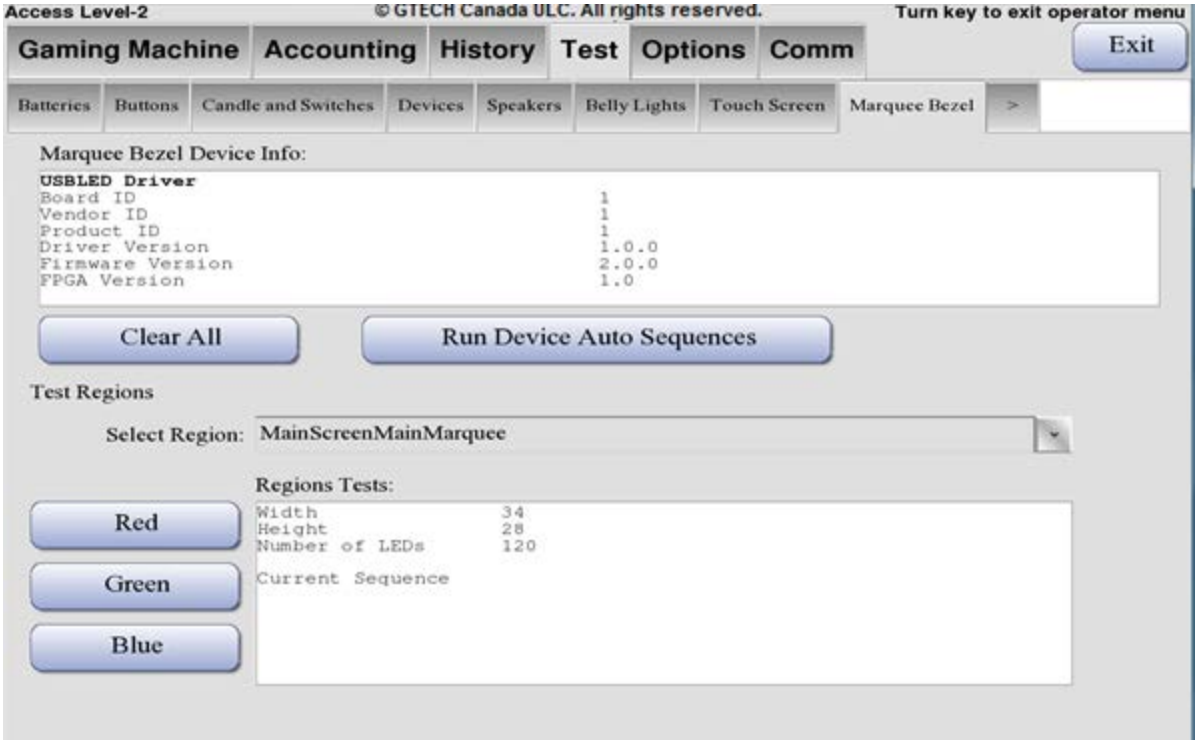

Figure 137 – Marquee Bezel

4.6.10. NVRAM

The **NVRAM** sub-tab reports the total amount of NVRAM available and currently used on the COAM. This screen also enables a technician to copy the encrypted contents of the NVRAM to a USB storage device (i.e. a USB stick). The screen provides step-by-step instructions on the proper method to carry out this procedure.

To copy to a USB device:

1. Insert a USB device into any available USB port on the logic box, wait 10 seconds, and select **Connect USB Device.**

2. The **Copy to USB Drive** button will be activated, select it to begin copying to device.

3. When copying is complete, select **Disconnect USB Drive** button and remove the drive from the machine.

Figure 138 - NVRAM

4.6.11. Doors

The **Doors** sub-tab allows the user to test the various door switches. Open and close the doors while in this test to test the door switches. The results will be displayed in the pane.

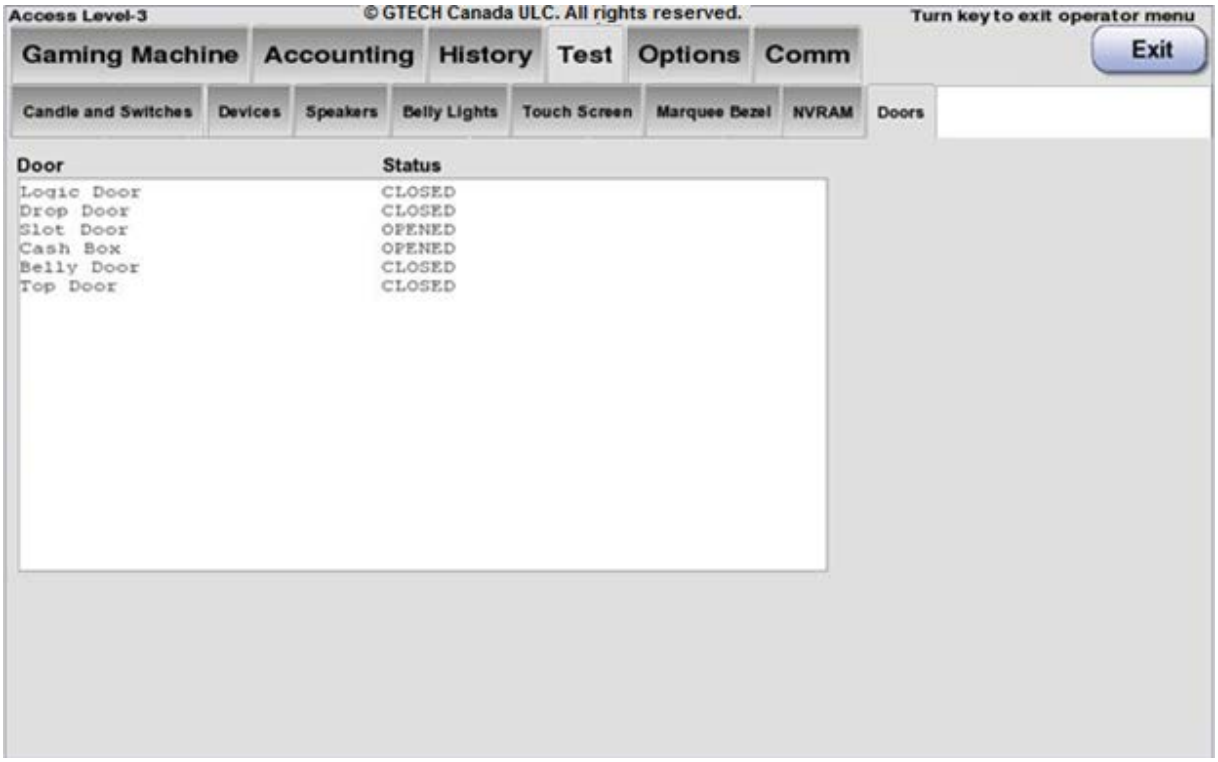

Figure 139 - Doors

4.6.12. RNG Test

The **RNG Test** sub-tab allows the user to test random number generator. The number size, format, high limit, quantity, and delimiter are configurable fields. The results of the RNG test can be saved to a USB device.

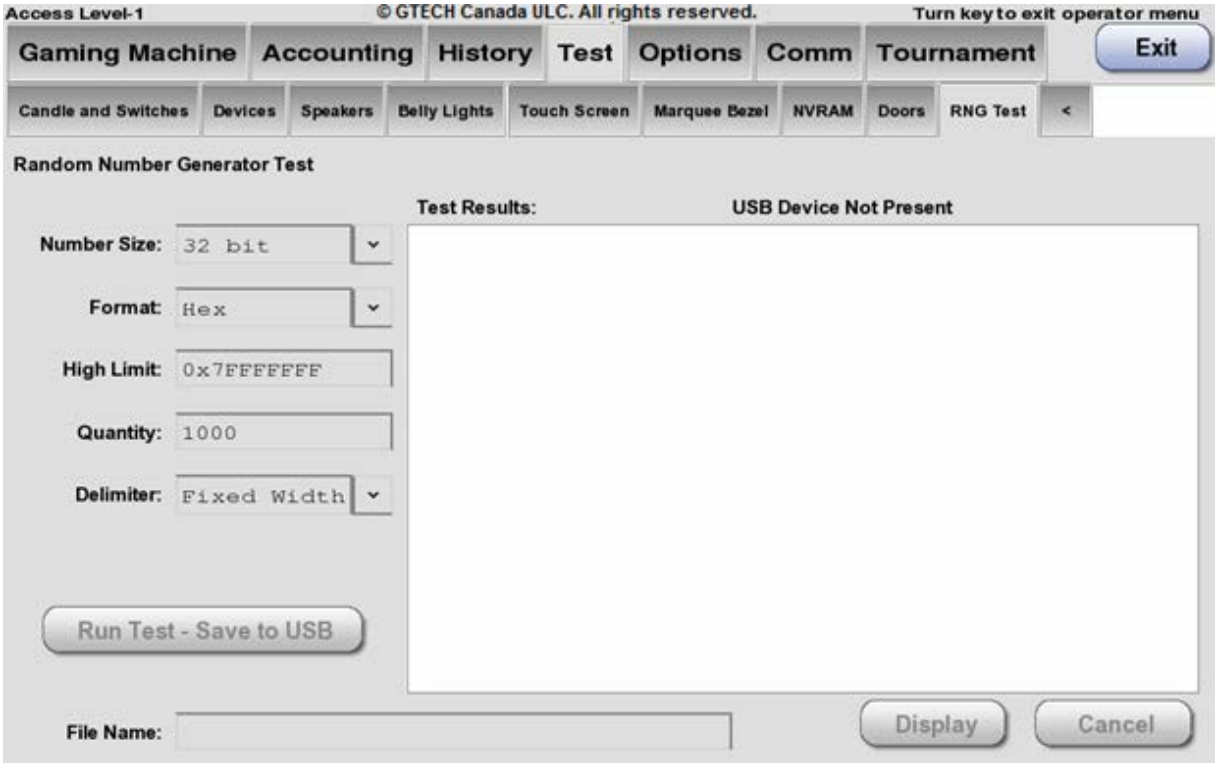

Figure 140 – RNG Test

4.7. Options

The **Options** tab contains sub-tabs that enable users to configure devices and peripherals, and other game configurations.

The **Options** tab includes the following sub-tabs:

- Volume
- Buttons
- Devices
- Games
- Gaming Machine
- Component Checksum
- GAT
- Candle
- Language

Figure 141 – Options

4.7.1. Volume

The **Volume** sub-tab is used to adjust the volume levels for the Main Game, Bonus Game, Error Alarm, and Door Alarm. The Sound Mode can also be configured by selecting from the **Sound Mode** drop down arrow and choosing one of the available options installed on the COAM, either “multi-channel”, or “stereo”.

To adjust the volume levels, touch and slide the buttons under the Min and Max levels of whichever game or alarm volume that needs adjusting.

If the **Player Volume Control** checkbox is enabled the Player is allowed to control the volume of the Main and Bonus Games they are playing within the limits set by the slider button controls.

The **Gaming Chair Present** checkbox is enabled when a gaming chair is attached and configured on this COAM.

If the **Continuous Alarm Sound** checkbox is enabled, the alarm will sound continuously until acknowledged.

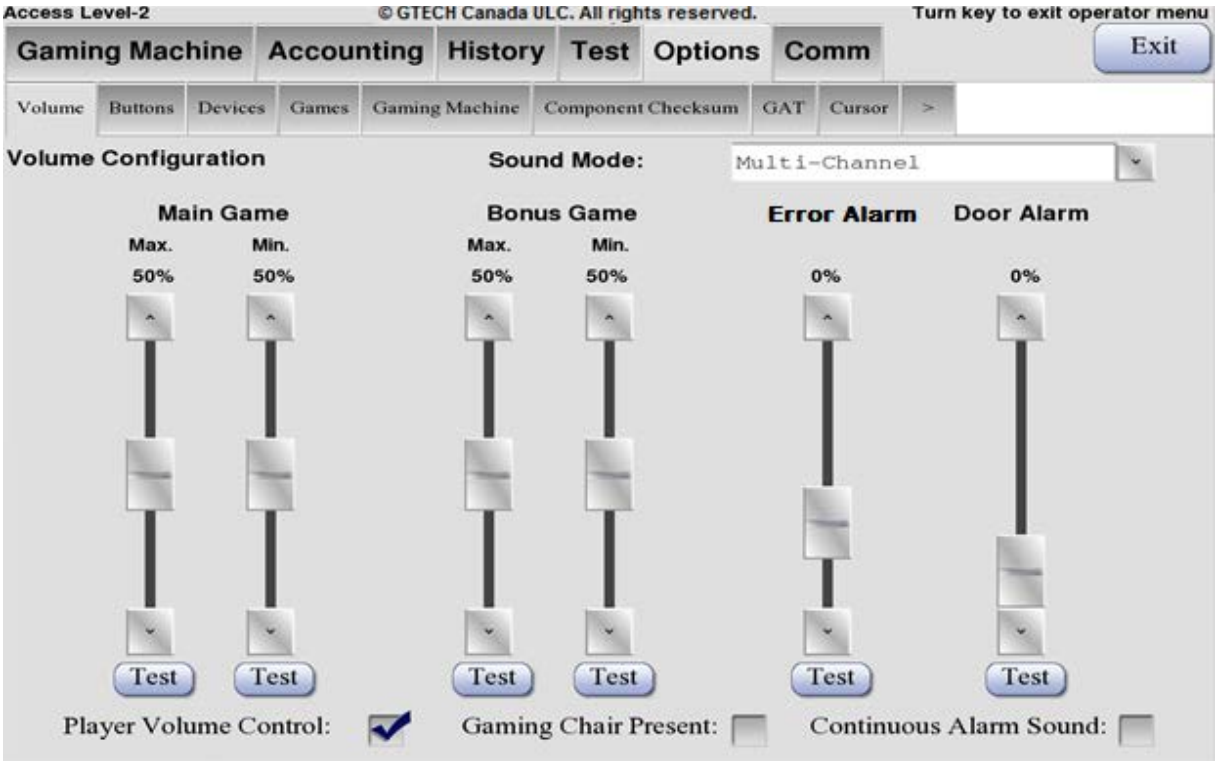

Figure 142 – Volume

4.7.2. Buttons

The **Buttons** sub-tab displays the **Choose Button Board Configuration** pane. This is used to designate the button configuration. The available button configurations are listed in the drop-down list, and the **PREV** and **NEXT** buttons allow the user to scroll through the available button from the selected configuration.

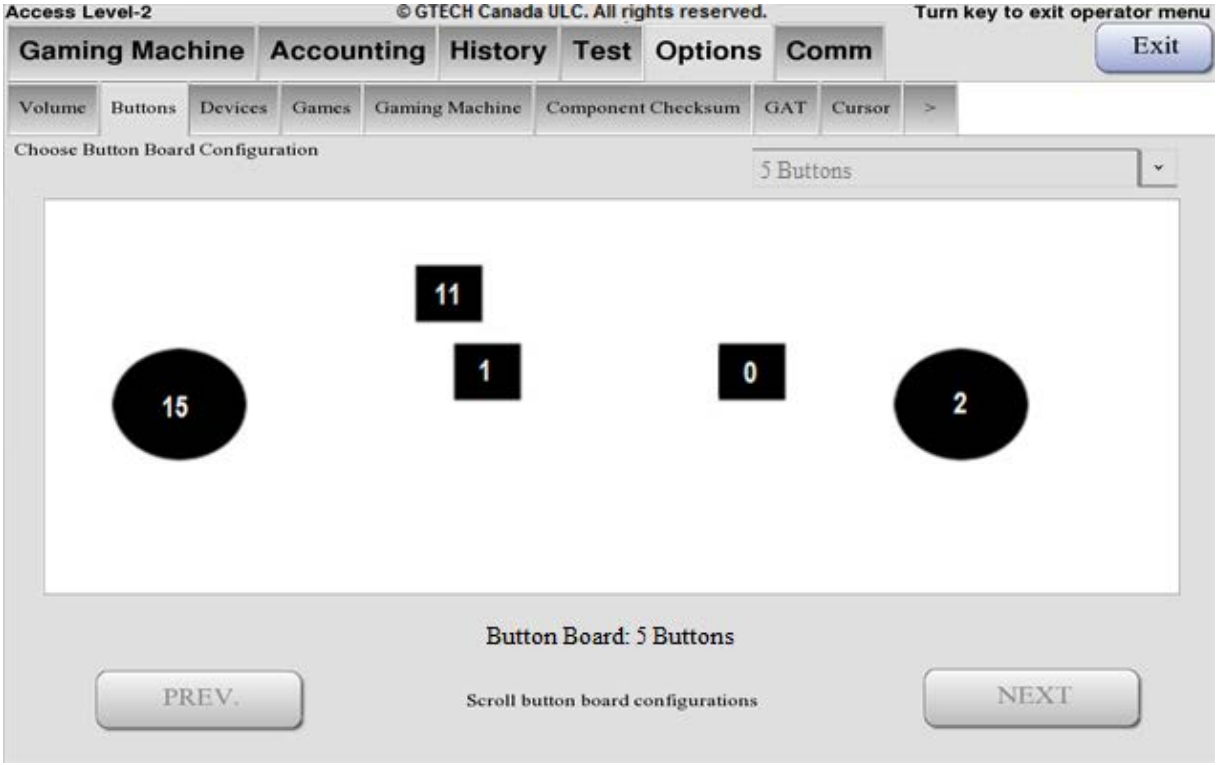

Figure 143 – Buttons

4.7.3. Devices

The **Devices** sub-tab allows the user to enable or disable peripherals such as, the **Bill Validator**, **Coin Validator**, **Printer, Hopper,** and **Keyed Credits** on the machine.

NOTE: The Coin Validator, Hopper, and Keyed Credits features are not available in this configuration.

The **Bill Validator** can be enabled by selecting the check box next to Bill Validator. Deselect the check box to disable it.

Enable the **Automatic Stacker Clearance** option to automatically clear stacker meters when the bill stacker is removed.

Press the **Start** button to manually clear the stacker meters.

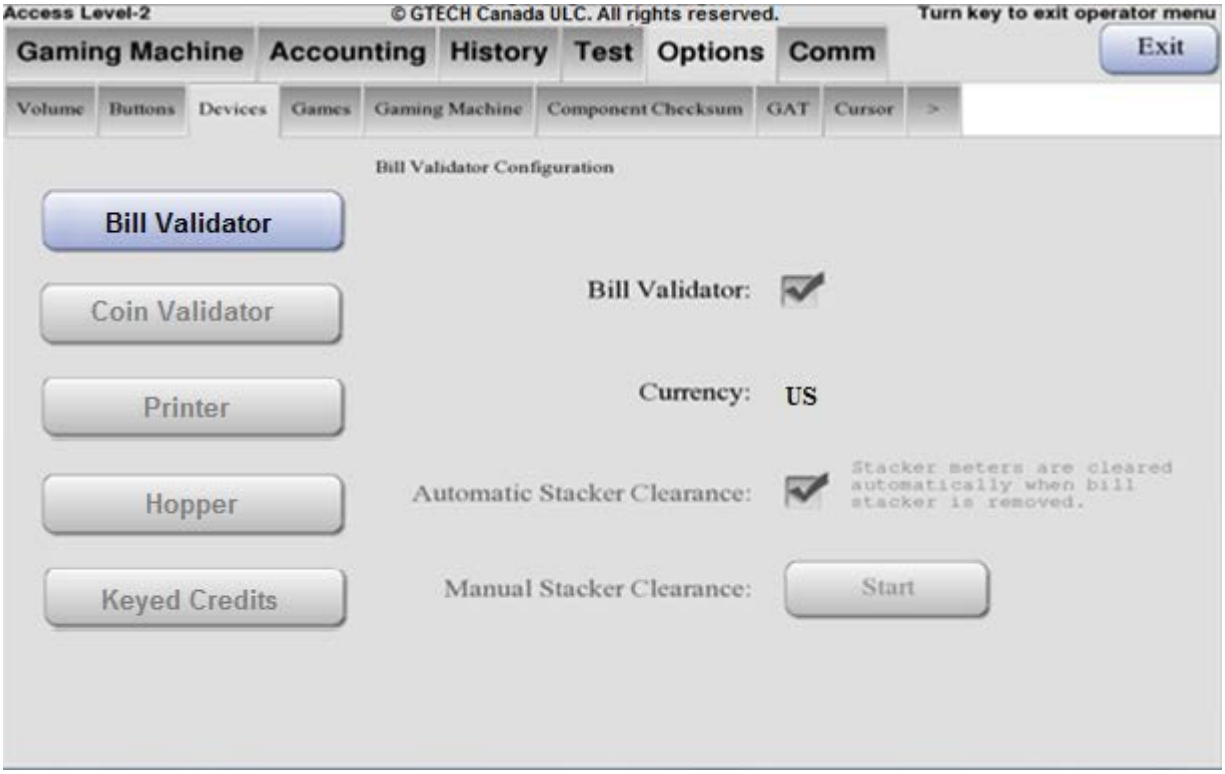

Figure 144 – Devices, Bill Validator

The **Printer** button allows the user to enable the printer if one is installed in the machine. Select the **Printer** checkbox to enable the printer. To disable the printer, deselect the checkbox.

Figure 145 – Devices, Printer

4.7.4. Games

The **Games** sub-tab provides access to game configuration settings on the machine.

Select the **Video Options** page to enable or disable the use of attract mode and to set the length of time the machine will stay idle before attract mode begins. **Attract Mode** keeps the game images moving on the screen, preventing the possibility of image burn on the LCD display, as well as demonstrating the features and functionality of the games for potential players.

This page also enables the user to enter and/or edit the Legal Age Notice Text (blank by default) for the COAM.

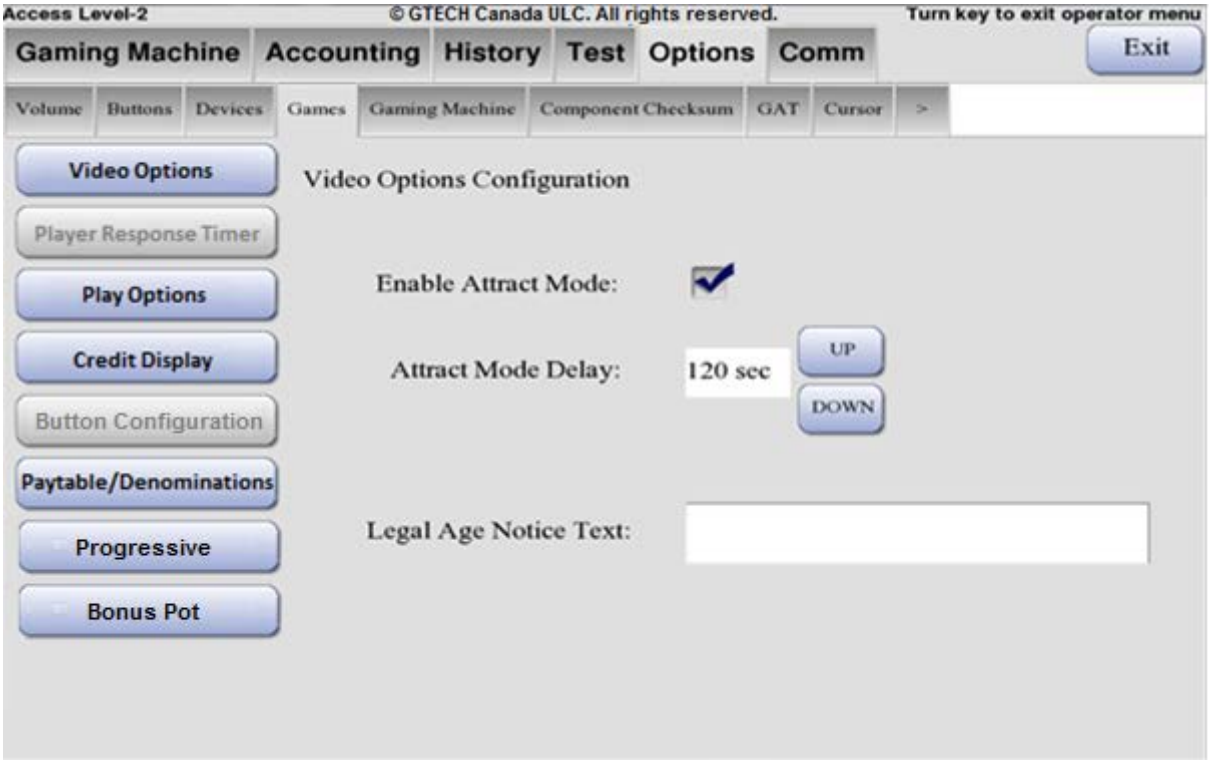

Figure 146 – Video Options

Select the **Play Options** button to configure values for Continuous Play, Auto Play, and Residual Credit Play.

Continuous Play: This option will enable the Auto Play button on the game dashboard. The COAM will play games without player interaction as long as the Auto Play feature is engaged. The player can stop auto play at any time by pressing the applicable button on the dashboard. Disabling the Continuous Play feature in the back office prevents the player from using the auto play feature during game play.

Auto Play: New game starts automatically if the player selects the auto play feature.

Residual Credits Play Off: Player can play off residual credits lower than actual bet to start a regular game.

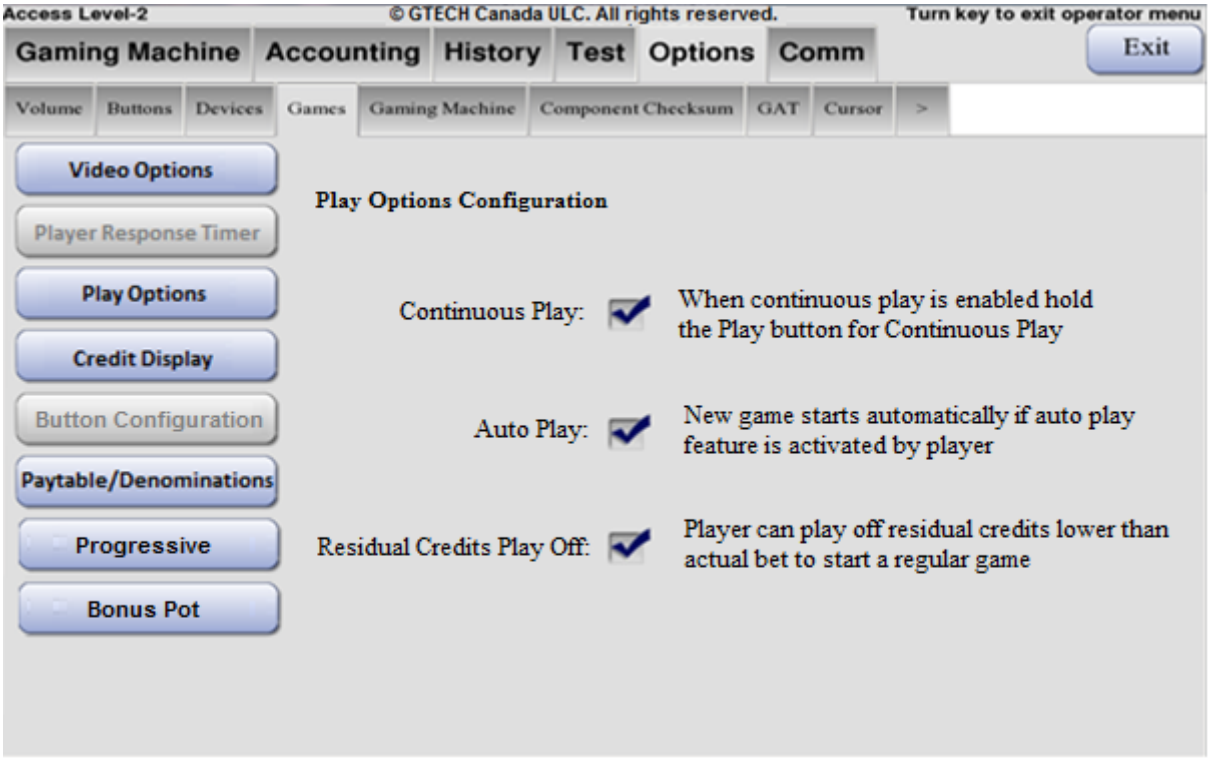

Figure 147 – Play Options

Select the **Credit Display** button to configure how credits are displayed to the player, either as credits, or as currency.

If the **Toggle On Touch** checkbox is enabled than the player can switch between seeing credits or currency on the game screen.

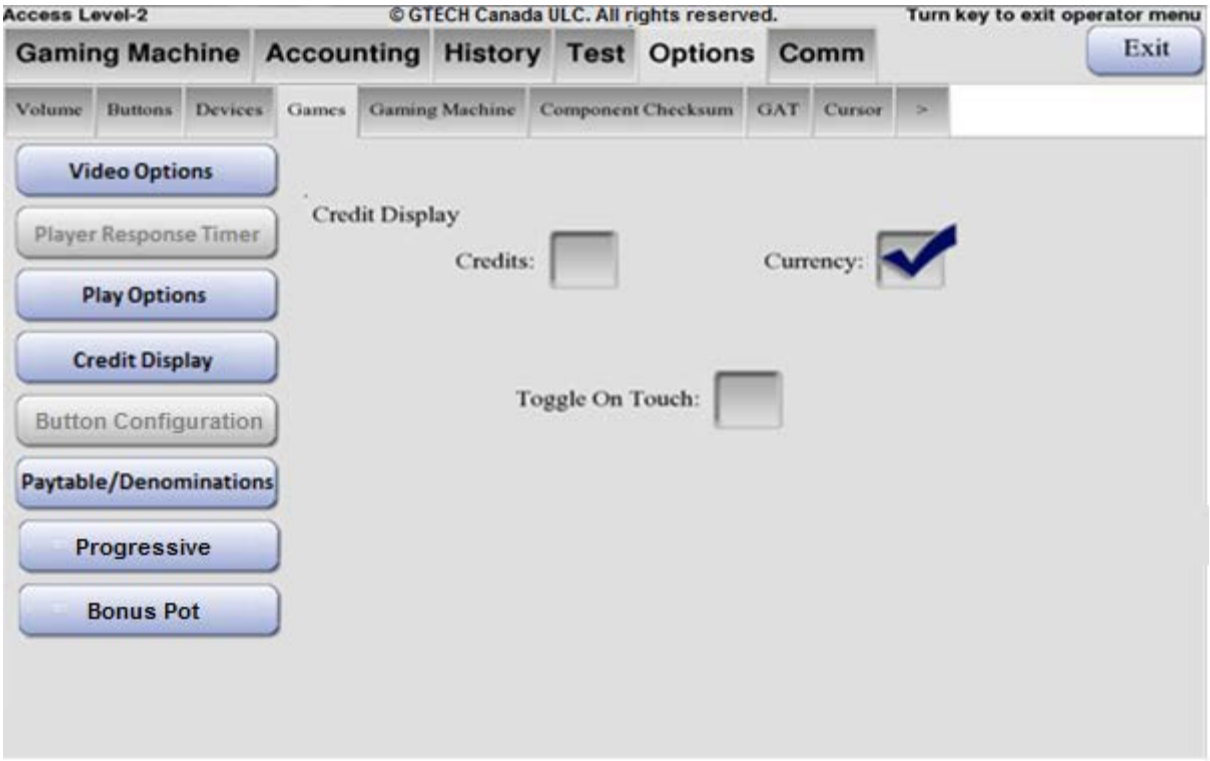

Figure 148 – Credit Display

Select the **Paytables/Denominations** button to view and/or configure game related information on the COAM.

There are now two pre-set versions of the games; a “low” and “high” payout percentage.

This feature displays the slots available and allows the user to configure the Paytable payout percentages for the entire game set(s). Once the setting is applied, the option to configure will no longer be available. A master reset or UMR will be required to re-configure the value(s).

To configure a Slot:

1. Select the “Low Paytables” or “High Paytables” option from the **Paytables** drop-down list.

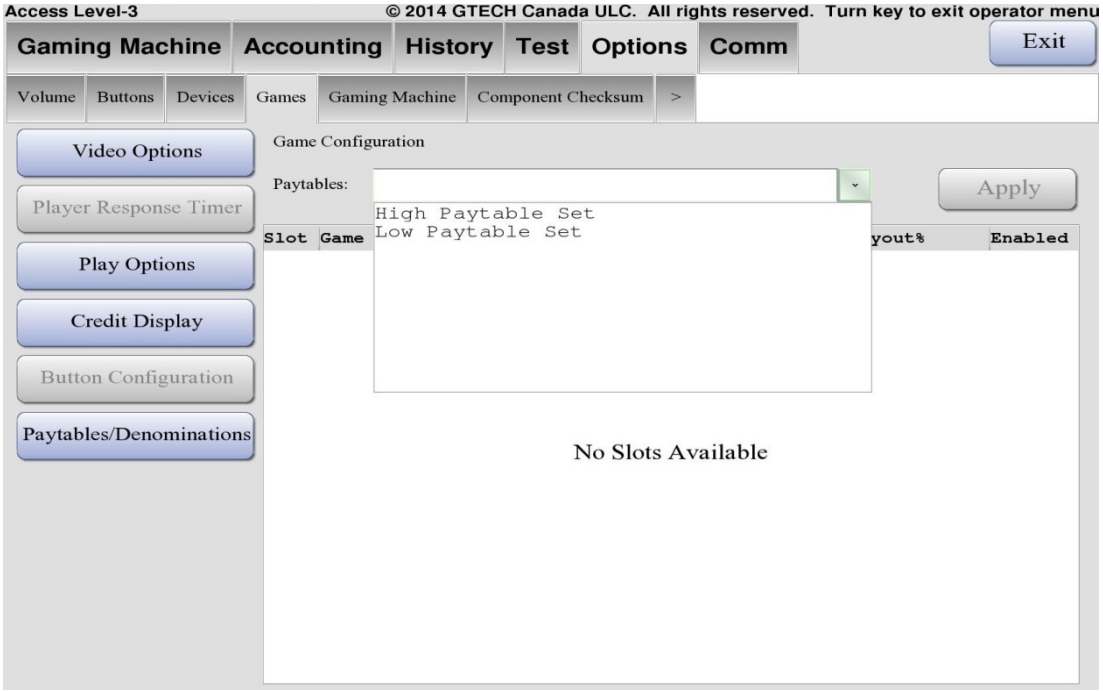

Figure 149 – Paytables/Denominations, Select Paytable

2. The game list will populate with the selected paytables.

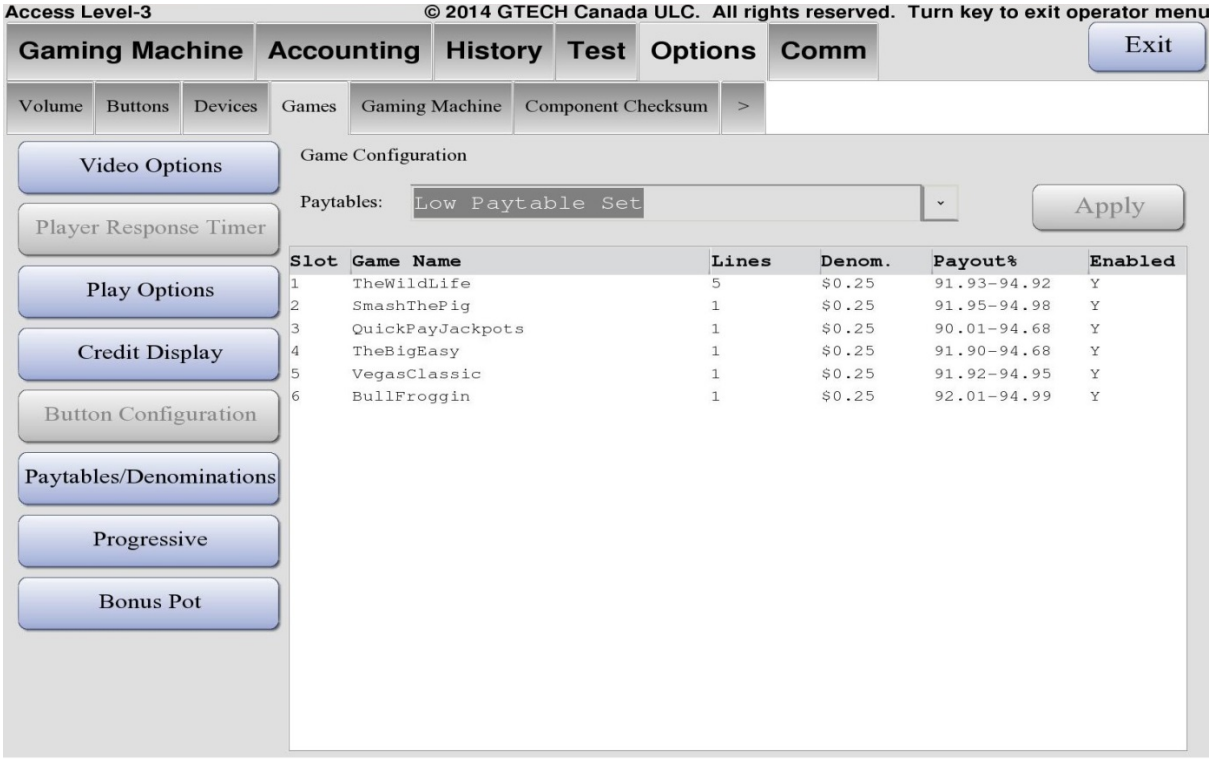

Figure 150 – Paytables/Denominations

3. Press **Apply**.

Selecting the **Progressive** button allows the user to view and configure the supported progressives for games on the machine. The **Slots** pane lists all of the games enabled on the machine. A specific game can be selected by touching the associated entry in the list. When a specific game is selected from the list, if that game supports progressives, the progressive associated with that game will be displayed in the **Progressives** pane of the page. If one of the entries in the list of progressives is selected, the **Value**, **Escrow**, and **Max** buttons will become active, enabling the configuration of those values for that particular progressive.

Progressive pots are configurable only after a CFInit or Master Reset, and before money is added to the COAM.

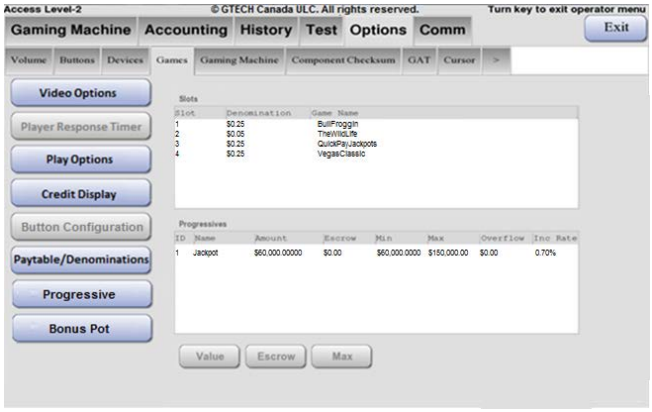

Figure 151 – Progressive

To configure a Progressive:

1. Select a game from the **Slots** pane.
2. Select the progressive that is associated with the game in the **Progressives** pane.
3. Select the **Value** button, and, using the pop-up keypad, enter the correct value of the progressive.

To set the maximum amount of the Progressive:

1. Select a game from the **Slots** pane.
2. Select the progressive that is associated with the game in the **Progressives** pane.
3. Select the **Max** button, and, using the pop-up keypad, enter the maximum amount of money that the progressive will be allowed to contain.

To set the Escrow amount, should a game have one, follow the same steps as above except select the **Escrow** button.

An escrow is a hidden bonus pot that is never revealed to the player. The escrow amount is sometimes used to reseed the bonus pot and/or retain the overflow from a progressive which has exceeded the maximum allowed.

Selecting the **Bonus Pot** button allows the user to view and configure the supported bonus pots for games on the machine. The **Slots** pane lists all of the games enabled on the machine. A specific game can be selected by touching the associated entry in the list. When a specific game is selected from the list, if that game supports bonus pots, the bonus pot associated with that game will be displayed in the **Bonus Pot** pane of the page. If one of the entries in the list of bonus pots is selected, the **Value**, **Escrow**, and **Max** buttons will become active, enabling the configuration of those values for that particular bonus pot.

Bonus pots are configurable only after a CFInit or Master Reset, and before money is added to the COAM.

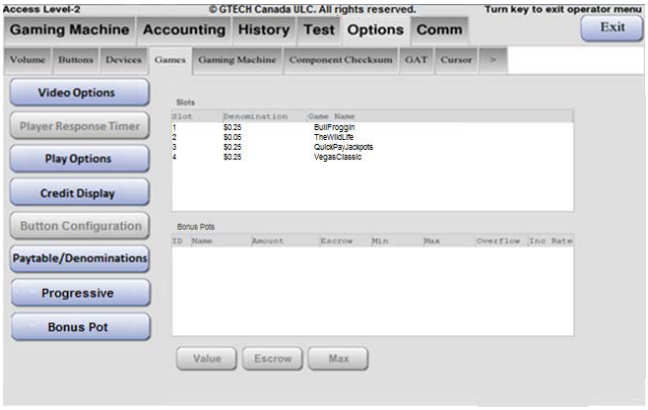

Figure 152 – Bonus Pot

To configure a Bonus Pot:

1. Select a game from the **Slots** pane.
2. Select the bonus pot that is associated with the game in the **Bonus Pot** pane.
3. Select the **Value** button, and, using the pop-up keypad, enter the correct value of the bonus pot.

To set the maximum amount of the Bonus Pot:

1. Select a game from the **Slots** pane.
2. Select the bonus pot that is associated with the game in the **Bonus Pot** pane.
3. Select the **Max** button, and, using the pop-up keypad, enter the maximum amount of money that the bonus pot will be allowed to contain.

To set the Escrow amount, should a game have one, follow the same steps as above except select the **Escrow** button.

An escrow is a hidden bonus pot that is never revealed to the player. The escrow amount is sometimes used to reseed the bonus pot and/or retain the overflow from a progressive which has exceeded the maximum allowed.

4.7.5. Gaming Machine

The **Gaming Machine** sub-tab provides access to machine specific configuration options.

Credit Limits is displayed by default. This allows the user to set the:

1. **Currency Acceptance Limit**: The amount in the bank at which the Bill Validator and the coin validator are disabled. These values may be edited by touching the text box and using the pop-up keypad to enter a new value.
2. **Payout Limit**: The maximum amount that can be paid out by the machine using a printed voucher. When a cashout is triggered that exceeds this limit, a ticket will print after the hand pay (key turn) is cleared.

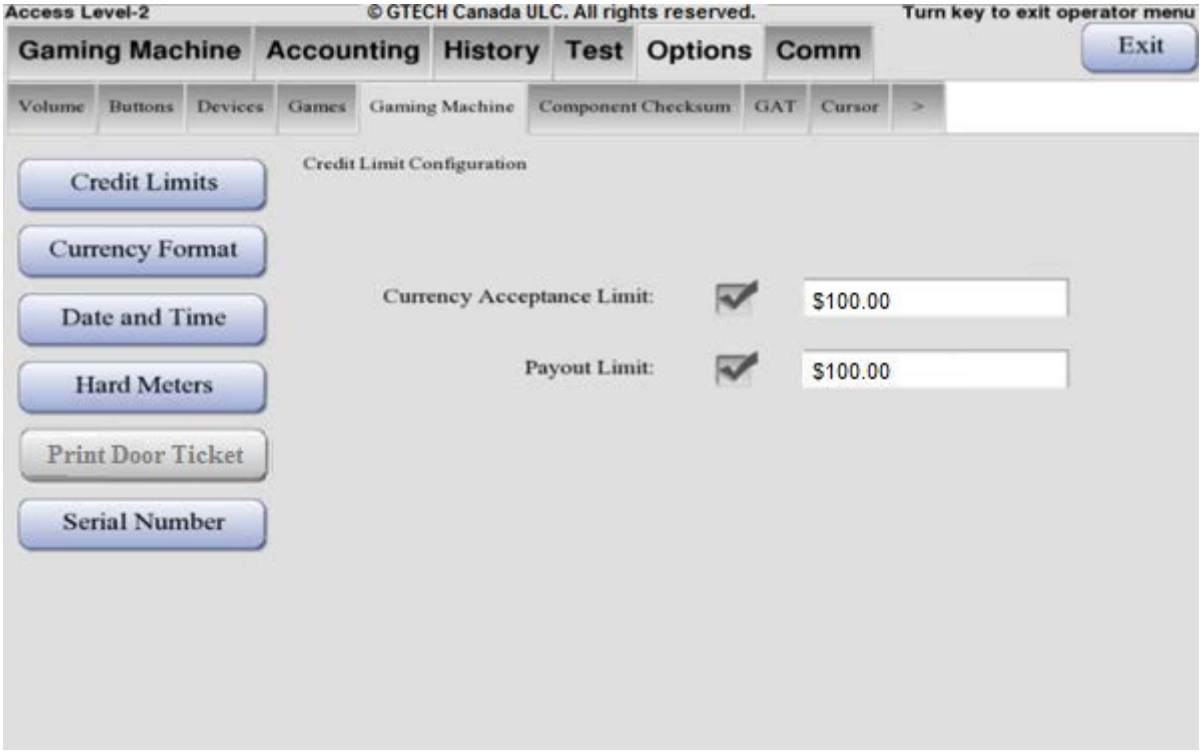

Figure 153 – Credit Limits

The **Currency Format** button allows the user to set Currency Sign Position, Thousands Separator, Decimal Separator, Currency String and Subcurrency String.

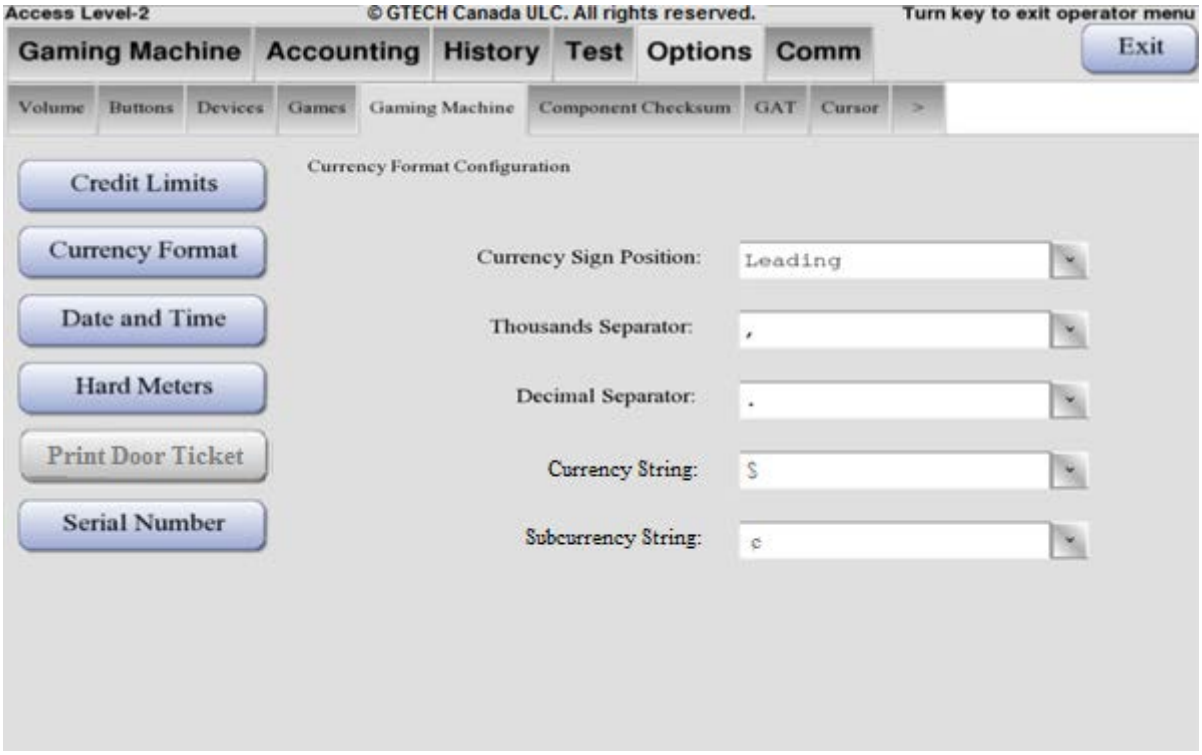

Figure 154 – Currency Format

The **Date and Time** button allows the user set the date and time on the COAM. In most venues, the date/time is automatically set by the host system.

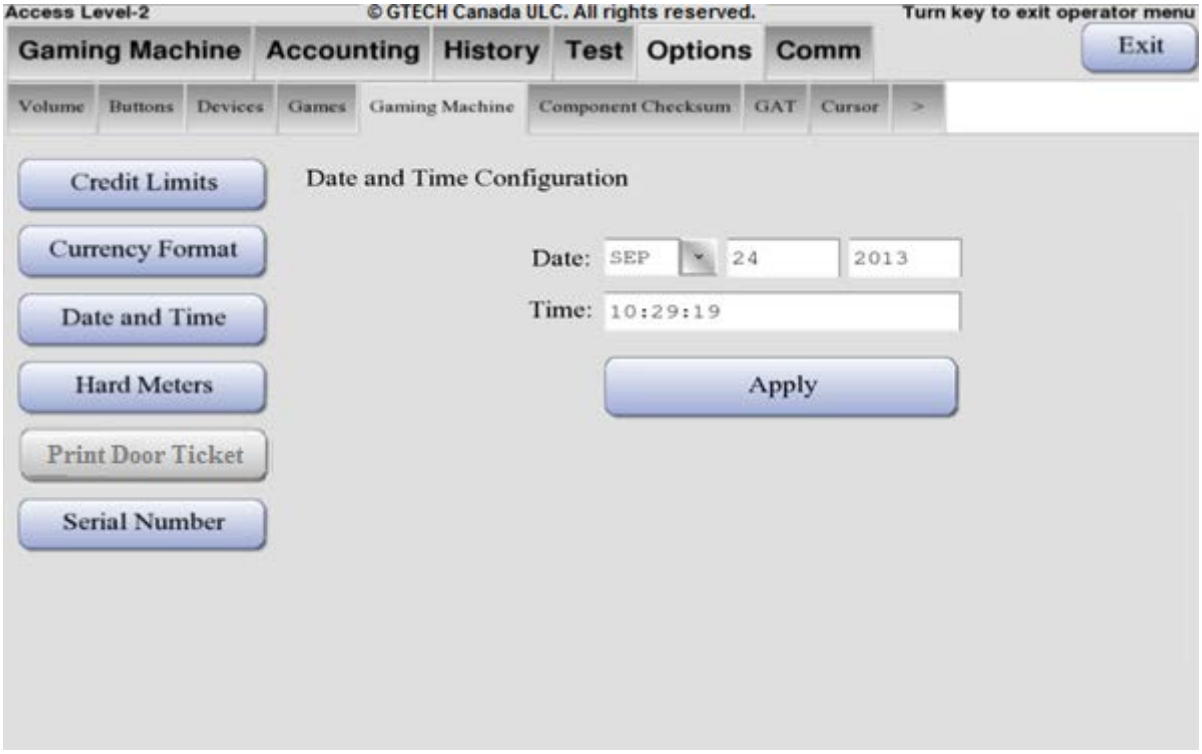

Figure 155 – Date and Time

The **Hard Meters** button allows the user to configure the hard meters on the COAM, including the ratio.

Specific soft meters can be mapped to specific hard meters. The ratio of hard meter increments to minor units of currency can be configured.

ex. 1:100 (1 increment per 100 cents)

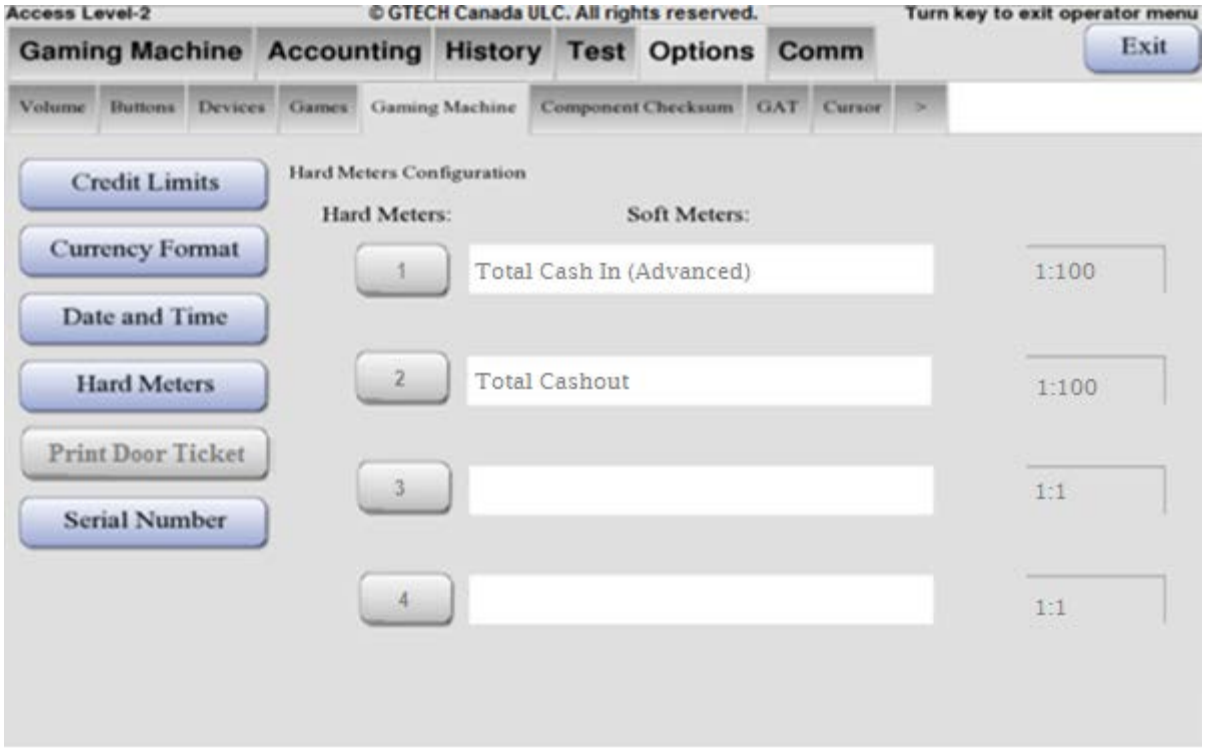

Figure 156 – Hard Meters

The **Serial Number** button displays the serial number of the machine. This value is typically configured at the factory.

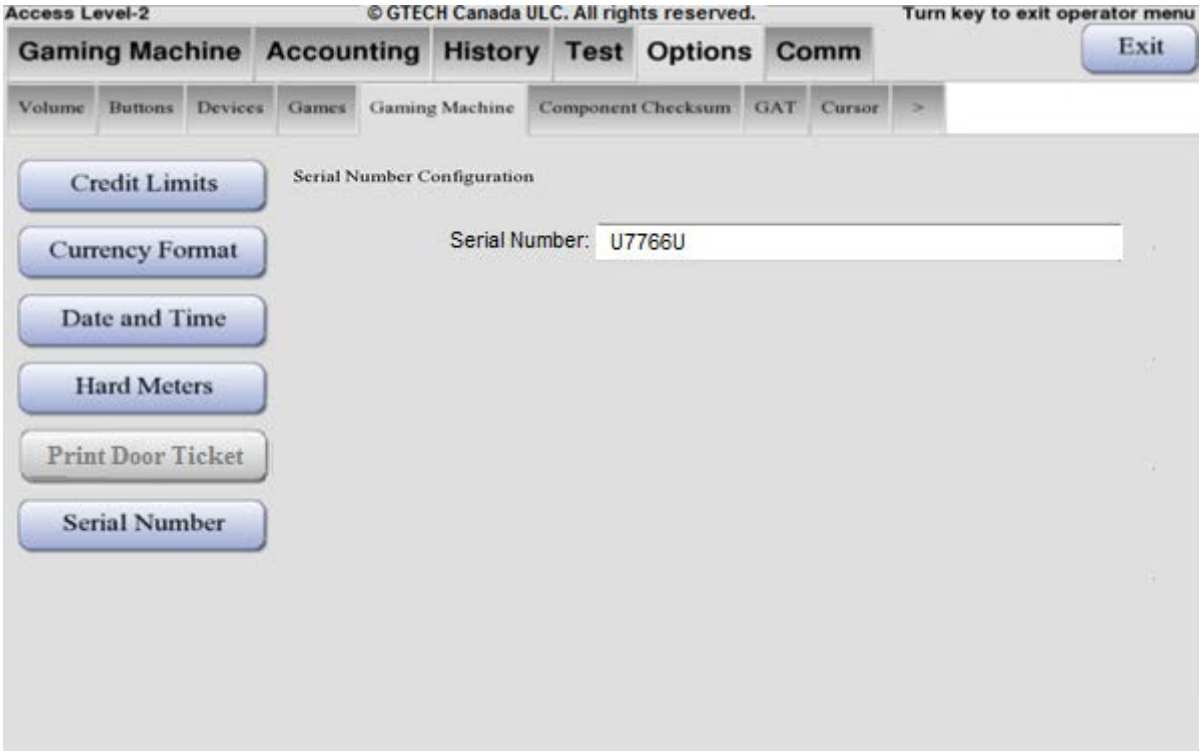

Figure 157 – Serial Number

4.7.6. Component Checksum

The **Component Checksum** sub-tab allows the user to select the Execute Checksum Calculation button which produces a CRC16 hexadecimal algorithm result that can be matched to the same result documented on the approval letter issued by a regulator or test agency. This function is used to validate that the COAM has the correct software.

NOTE: In some jurisdictions, a different checksum algorithm may be used, such as SHA-1.

Individual checksums are calculated on the actual software components. The total checksum (i.e. Total Checksum Signature Verification) is calculated on the signature files of platform and game components plus the BIOS and Market ID components.

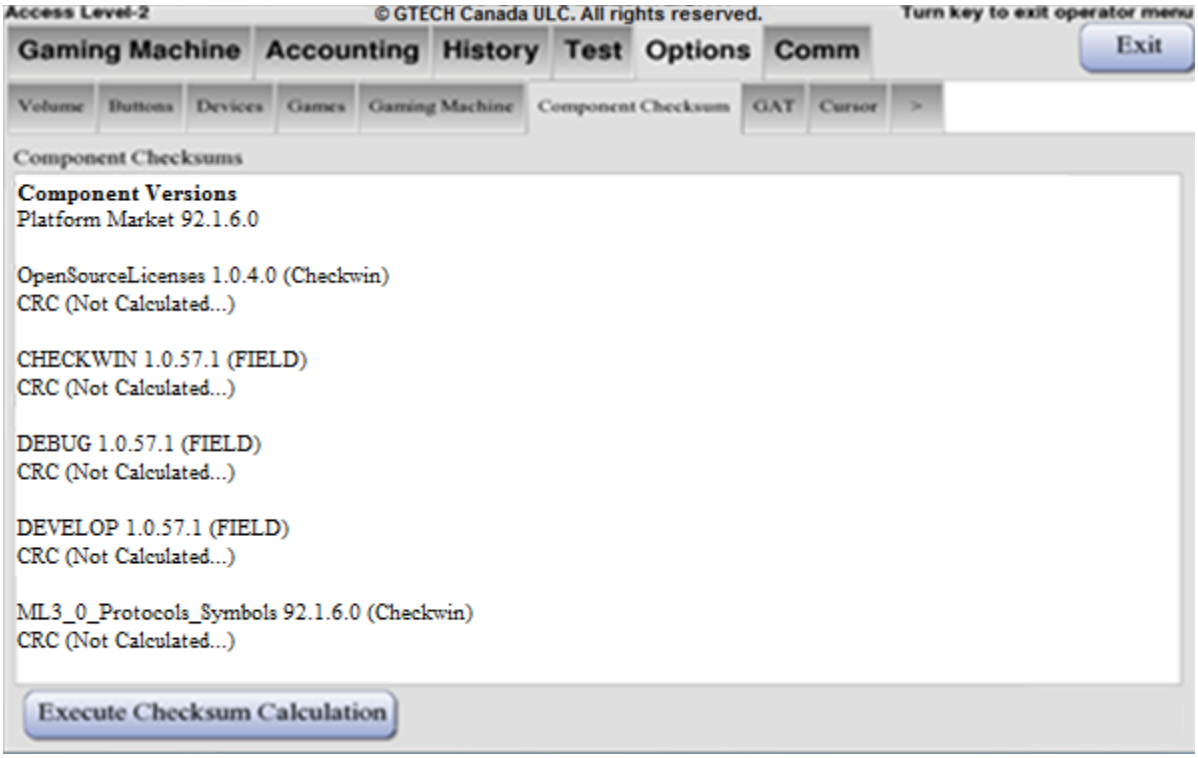

Figure 158 – Component Checksum

4.7.7. GAT

The **GAT** (Gaming Authentication Terminal) sub-tab enables Regulators to verify gaming software and firmware on the COAM. This is primarily intended to facilitate compliance with jurisdictional requirements.

1. Connect serial cable (RS-232) from computer to an available port on the EGM.
2. Using the Serial Ports drop-down, select the serial port that is being used. Upon valid selection will cause the Start button to become active.
3. Execute the appropriate GAT Tool on the GAT host computer.
4. Select Start to begin communication between the EGM and GAT host computer.
5. When the process has completed, the results will be displayed in the window.

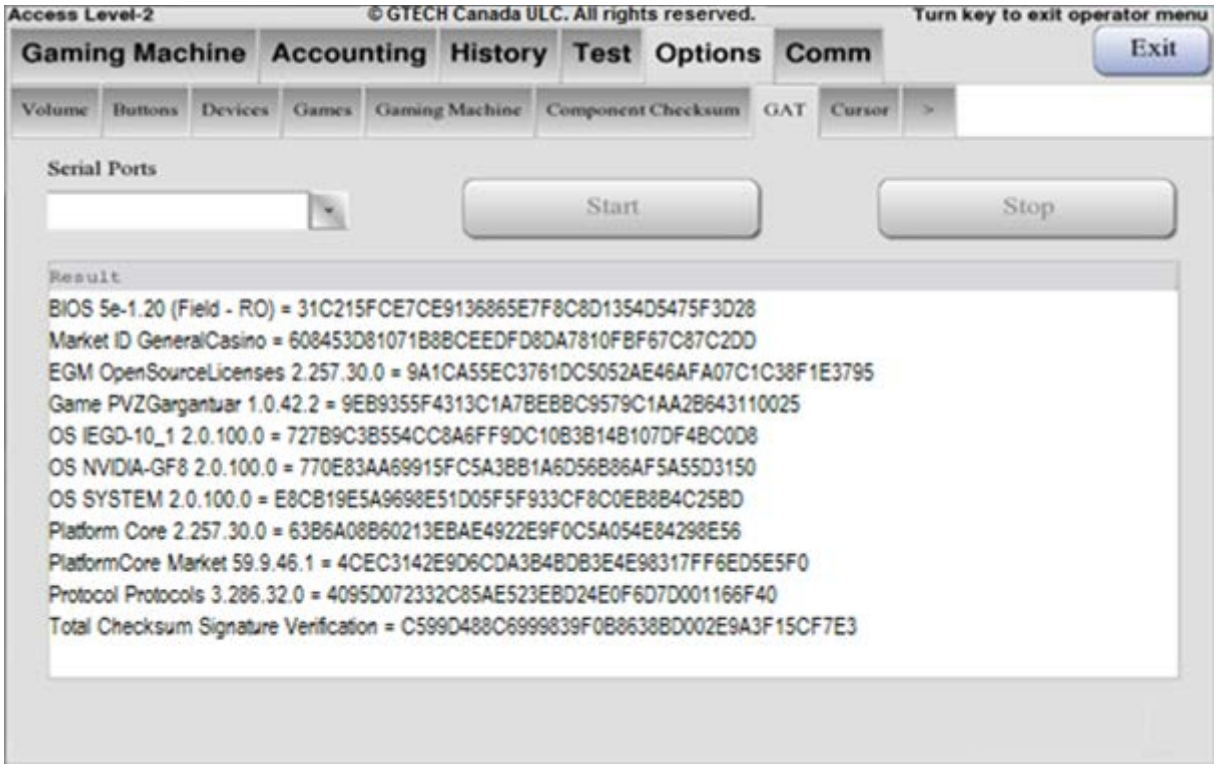

Figure 159 – GAT

4.7.8. Candle

The **Candle** sub-tab allows the user to configure the lighting behavior of the Candle installed on the COAM. The candle can be configured to react in a certain way when a particular event occurs. The top and bottom sections of the candle are configured individually to turn “on”, turn “off”, “flash slow”, “flash medium”, or “flash fast” in any desired combination to indicate a specific event. Typically the preferred candle behavior is specific to individual venues.

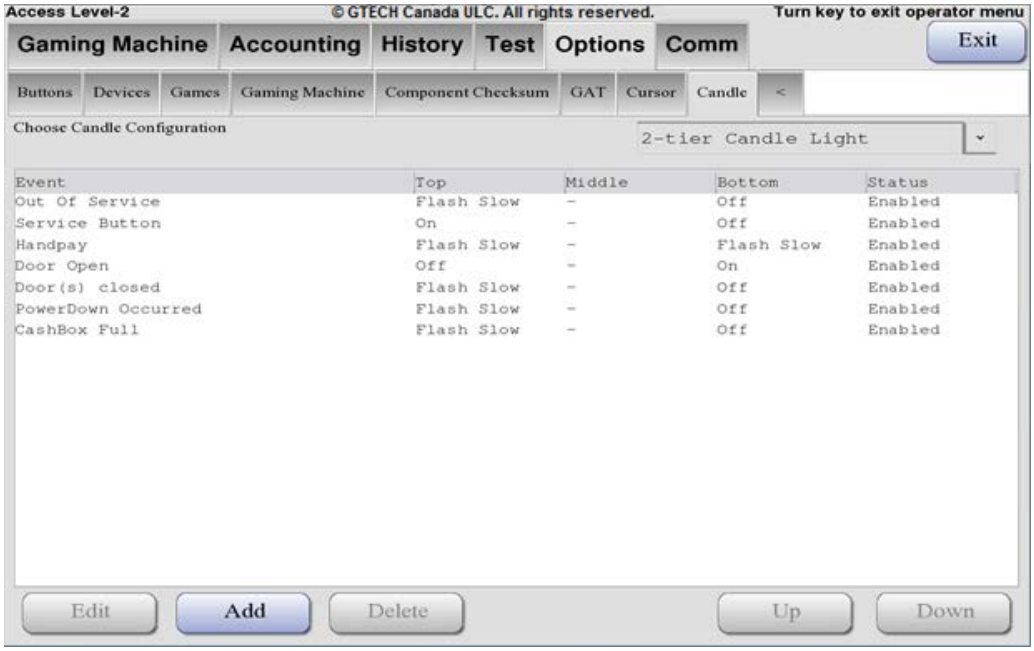

Figure 160 – Candle

Figure 161 – Candle Configurations

To edit the default Candle configuration:

1. Select an event in the pane to highlight it.

2. Select the **Edit** button. The **Setup For Candle** pop-up appears.

3. In the pop-up, select one of the Candle Options from the drop-down for both the Top and Bottom candle sections.

4. Ensure the **Candle Entry** check box is selected if you wish this entry to be enabled. If the check box is empty, this entry will be disabled and will not operate.

5. Press **Enter** when complete to save the settings. The pop-up will disappear and the new settings will appear in the list.

To add a Candle configuration:

1. On the **Candle Configuration** sub-tab, select the **Add** button. The **Setup For Candle** pop-up appears.

2. From the **Select Condition** drop-down choose the desired event.

3. Select one of the Candle Options from the drop-down for both the Top and Bottom candle sections.

4. Ensure the **Candle Entry** check box is selected if you wish this entry to be enabled. If the check box is empty, this entry will be disabled and will not operate.

5. Press **Enter** when complete to save the new configuration. The pop-up will disappear and the new entry will appear in the list.

To delete a Candle configuration:

1. On the **Candle Configuration** sub-tab, select the entry you wish to delete to highlight it.

2. Select the **Delete** button. The entry will be deleted from the list.

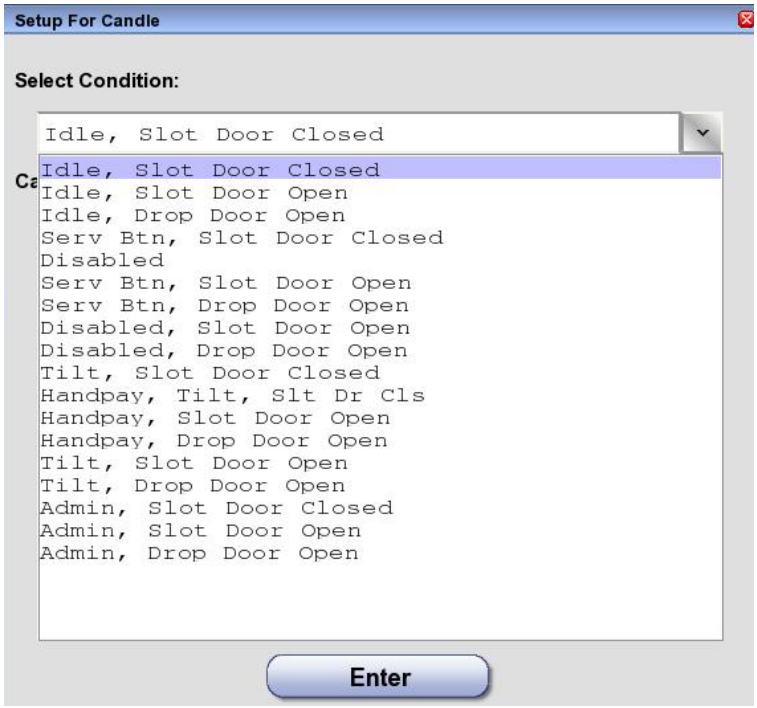

Figure 162 – Set up For Candle Pop-up

To change the order of the Candle configurations:

1. On the **Candle Configuration** sub-tab, select the entry you wish to change to highlight it.

2. Press the **Up** or **Down** buttons to move the selected entry up or down in the list.

NOTE: The order of the entries in the list determines the precedence of the conditions that trigger the candle. If two separate events occur that both trigger the candle, the event that is higher in the list takes precedence. For example, if the COAM is out of service and a door is open at the same time, the candle will flash for the "Out of Service" condition if it is higher in the list than the "Door Open" condition.

4.7.9. Languages

The **Languages** button allows the user to set the language of the games. The user would select the desired language from **Available Languages**, and press the arrow buttons **(>>)** or **(<<)** to add or remove from the list of **Selected Languages**.

Select the **Default Language** to set the language that appears by default when the game is played. The second choice of language appears as **Fall Back Language**.

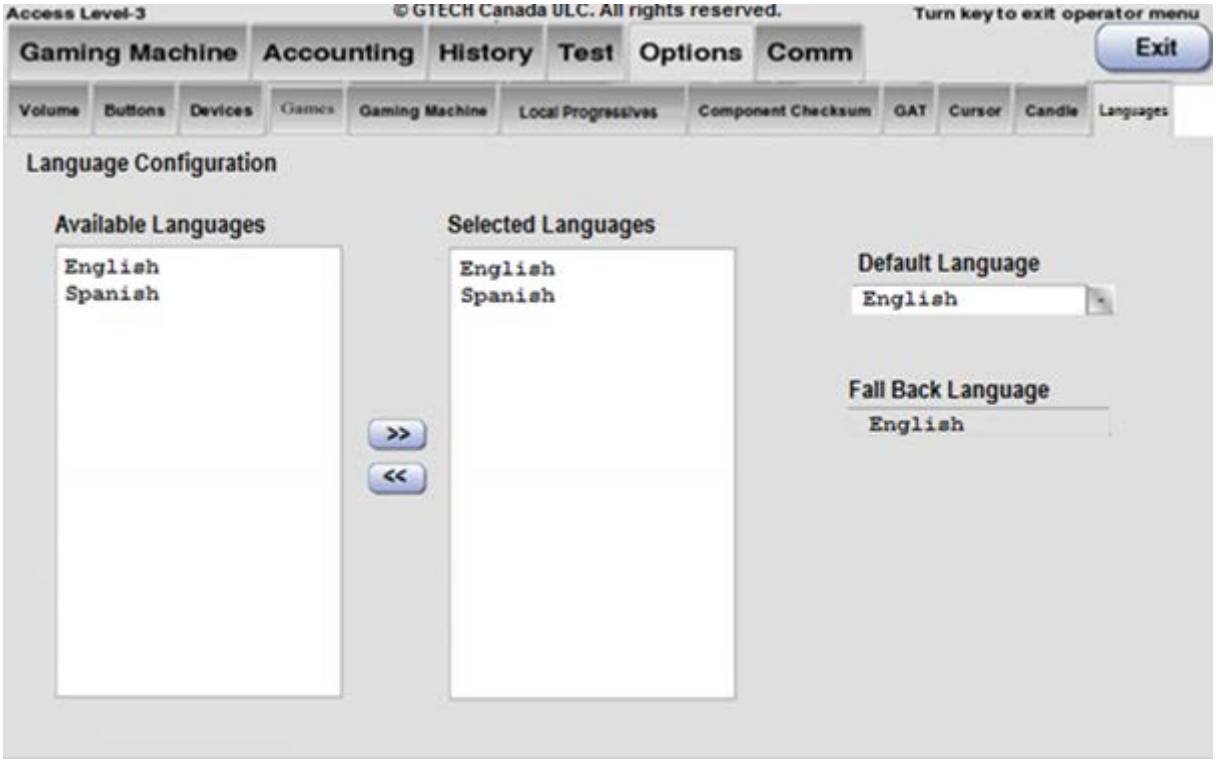

Figure 163 – Game Languages

4.8. Comm

The **Comm** tab provides access communications settings.

The **Comm** tab includes the following sub-tabs:

- SAS
- Network Card
- G2S Discovery Responder
- G2S Startup

Figure 164 – Comm

4.8.1. SAS

The **SAS** sub-tab provides access to the **SAS Configuration** page which allows the user to configure all of the SAS-related functions and settings on the COAM. As communications ports are assigned to the available functions, the corresponding buttons become active allowing the user to enter configuration settings for each particular area of functionality.

By default the **Ports** page is displayed. This page enables the user to select which machine ports are used for communication for specific functions. In the **Assign Ports** area of the page, use the drop-downs to select the communication port to be used for the **Accounting/Control**, **Validation**, **Progressive**, **AFT/EFT**, and **Legacy Bonusing** functions. The **Assign Ports** area of the page allows for the address for each port to be entered. When a port address field is touched, a keypad will display for manual entry of the port address. The **Fiber Optic** check box, when selected, toggles between enabling and disabling of the RS-485 port for fiber optic communication.

When the **Lock on Disconnect** checkbox is checked, the EGM will become disabled if SAS communications are disconnected.

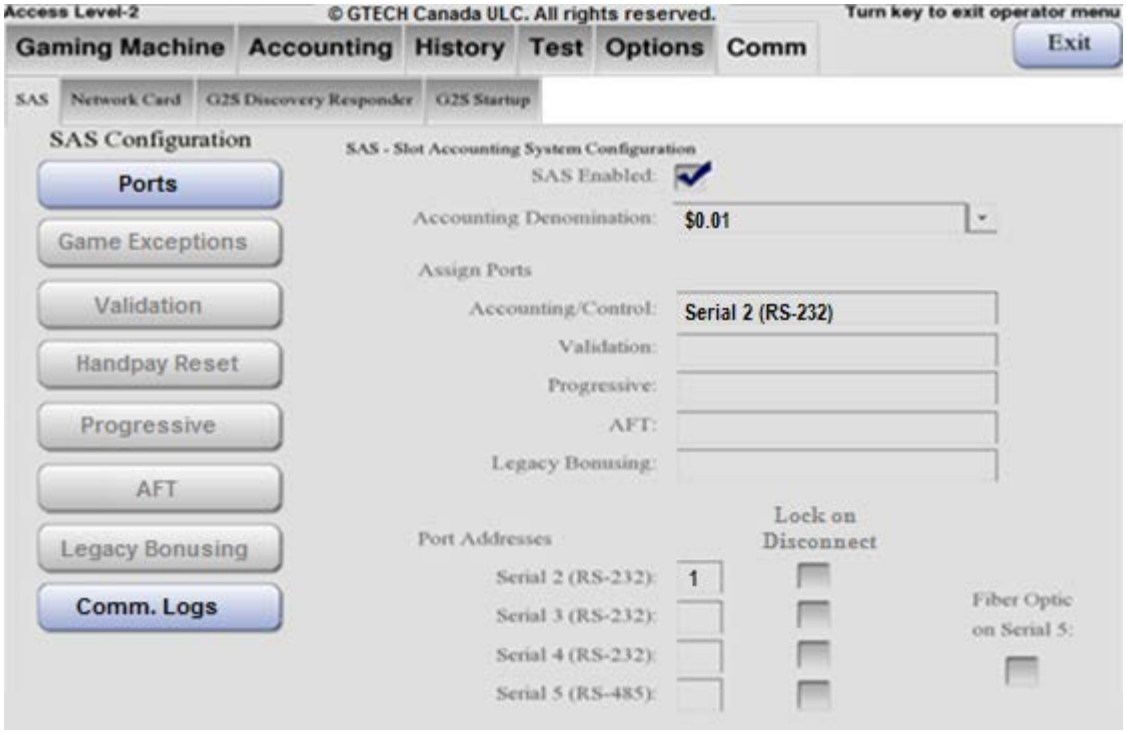

Figure 165 – Ports

The **Comm Logs** page is used for debugging and troubleshooting purposes. It displays a history of the communication on the serial ports supported by the COAM. The page refreshes when a serial button is pressed and provides a snapshot of the communication on the selected port. Select the **Print** button to print a copy of the log, if desired.

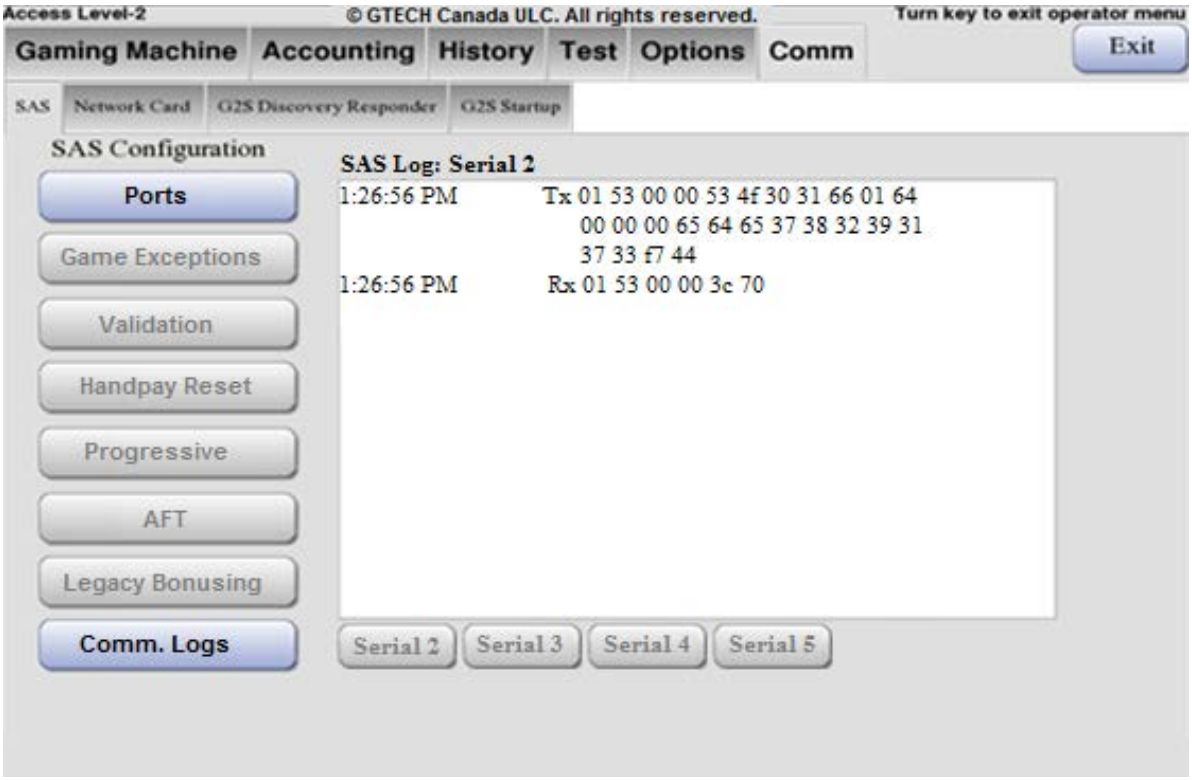

Figure 166 – Comm. Logs

4.8.2. Network Card

The **Network Card** sub-tab allows the user to configure IP address, Subnet Mask, Default Gateway or enable Obtain IP address automatically.

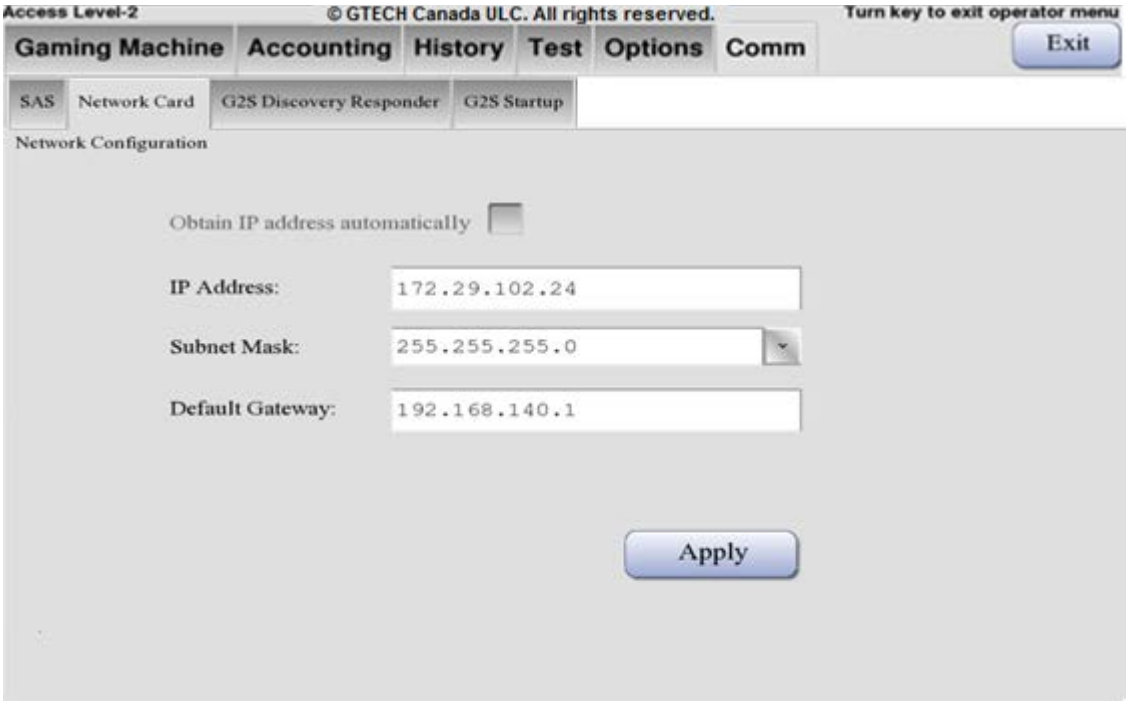

Figure 167 – Network Card

4.8.3. G2S Discovery Responder

The **G2S Discovery Responder** sub-tab is only used when the COAM is participating in a tournament network. Enabling this feature will broadcast its location to the *GameBoss* controller.

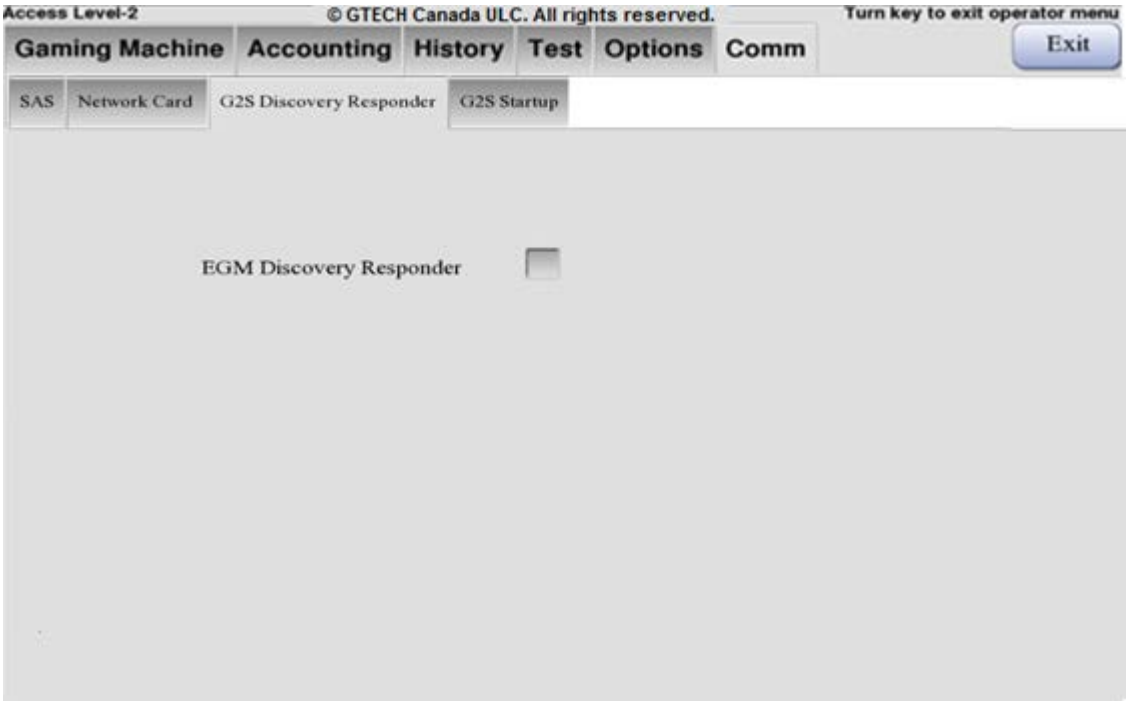

Figure 168 – EGM Discovery Responder

4.8.4. G2S Startup

The **G2S Startup** sub-tab allows the user to view communication events between the COAM and the *GameBoss* controller.

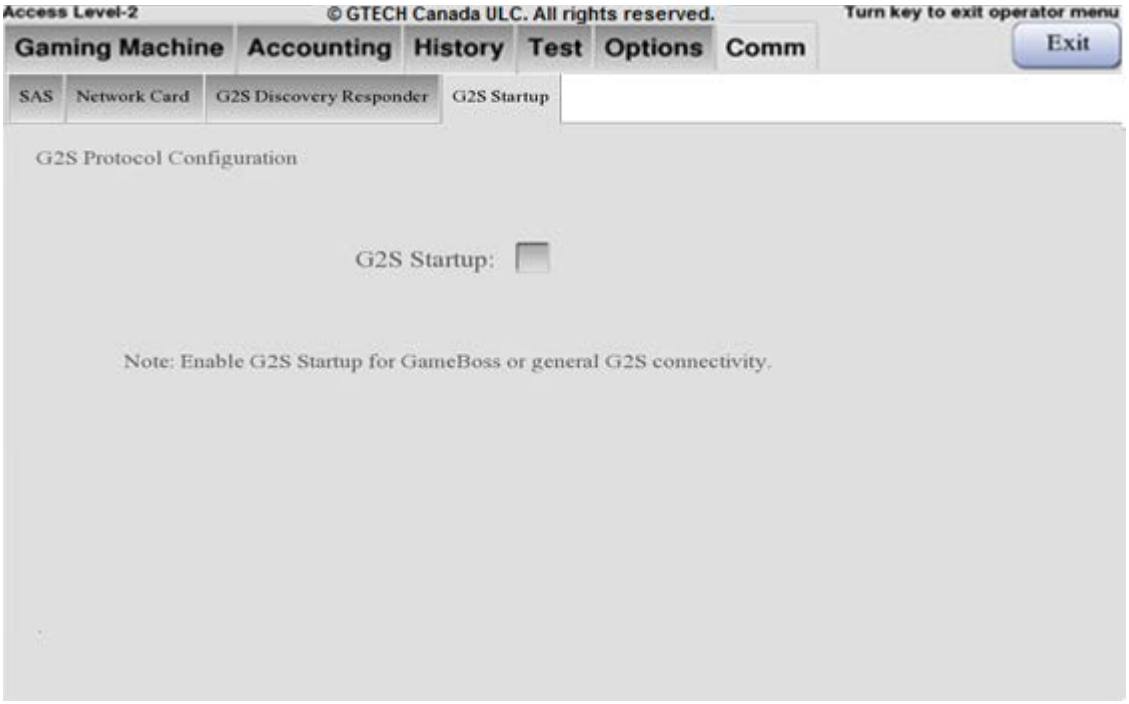

Figure 169 – G2S Startup

Section 5 – Error Messages

Section 5 – Error Messages will describe errors messages that may be encountered on the COAM. There are two types of Error Messages: Recoverable and Non-recoverable. Recoverable Errors are cleared by rebooting the COAM or by manually clearing the error in the back office menus. Non-recoverable errors are cleared by performing a Master Reset on the COAM.

Section Overview:

- Generic COAM Configuration Errors
- SAS Communication Errors
- Bill Validator Errors
- Door Errors
- Other Hardware Errors
- Software Errors
- Printer Errors

5.1. Generic COAM Configuration Errors

Out of Service	Generic error message displayed when the COAM is out of service. Usually followed by additional specific error messages.
Out of Service by Technician	A technician has intentionally placed the COAM in an out of service state.
Please Remove Security Key from Machine	The paytable security key has been left connected to the logic box parallel port.
No Games Enabled	Games have not been configured and enabled or have been disabled by the host.
Ticket Information Not Set	Ticket information has not been configured on the COAM or has not been sent by the host. To configure this information directly from the COAM, enter the technician menus at OPTIONS/GAMING MACHINE/TICKET INFORMATION. At minimum, the “Name” field must be set in order to clear this error. Alternatively, ticket information can be sent from the host using SAS protocol.
Power Down Occurred	This message will be displayed after the COAM is powered down and then powered back up. This message will disappear when the next game is played or when the back office menus are accessed.

Table 11 – Generic COAM Configuration Errors

5.2. SAS Communication Errors

Broadcast Disable	Shutdown command was sent by the host. The host needs to send startup command to clear the error.
Maintenance Mode	COAM has been placed in maintenance mode by the host. The host needs to send exit maintenance mode command to clear the error.
Validation/Accounting port not set	The Accounting/Control port has not been configured on the Comm/SAS/Ports screen.
Validation ID Not Configured	Validation ID has not been received by the host.
Validation Buffer Full	The cash out buffer is full. Normally caused by a loss of communication on the validation port. Re-establish protocol communication to clear.
Port address not set	The port address has not been set on the Comm/SAS/Ports screen.
Progressive Communication Lost	COAM has lost communication on the progressive port. The Link between COAM and progressive controller has been lost.
Disable by Central	See Broadcast Disable above.
AFT Game Lock	AFT lock command has been sent by host or player tracking system.
Protocol Communication Lost	Communications link to host has been lost. Link between COAM and host controller has been lost.

Table 12 – SAS Communication Errors

5.3. Bill Validator Errors

Bill Stacker Open	The bill stacker has been removed.
Bill Validator Jam	There is a ticket or bill jammed in the Bill Validator.
Bill Stacker Jam	The bill stacker has jammed.
Bill Validator Cheated	An attempt to cheat the Bill Validator has occurred.
Bill Validator Failure	The Bill Validator is malfunctioning.
Bill Country Error	Bill Validator firmware has the wrong country code.
Bill Communication Timeout	Bill Validator has lost communication with the COAM. Re-connecting and rebooting the COAM should clear this error.
Bill Validator Offline	The Bill Validator is offline. Re-connecting and rebooting the COAM will clear this error.

Table 13 – Bill Validator Errors

5.4. Door Errors

Slot Door Open	The main door is open.
Logic Door Open	The logic door is open.
Belly Door Open	The belly door is open.
Top Door Open	The top door is open.
Cash Box Open	The cash box door is open.
Drop Door Open	The door of the cash box enclosure is open.

Table 14 – Door Errors

5.5. Other Hardware Errors

Battery 1 Low	Battery 1 voltage is below the fail point.
Battery 2 Low	Battery 2 voltage is below the fail point.
Battery 3 Low	Battery 3 voltage is below the fail point.
Hard Meter Disconnected	The hard meters have lost connection with the COAM.
Touch Sensor Offline	The touch screen sensor is offline or disconnected. The touch screen sensor is located behind the main LCD screen and connects to the Logic box.
USB cable	Make sure the USB cable is connected properly and reboot the COAM.

Table 15 – Other Hardware Errors

5.6. Software Errors

Market ID Error	There is a Market ID mismatch.
System Error (X)	The software has created an exception and caused a critical error. The type of error is represented by (X) where X is a numerical code. Recovery from a System Error is dependent on the type of error. Some errors can be recovered by a simple reboot while others recover only from a Master Reset using the security key. Numeric Error Codes: 0 – Undefined Error 1 – File Open Failed 2 – File Creation Failed 3 – File Access Failed 4 – Random Number Invalid 5 – Invalid Sequence Number 6 – Printer NVRAM Error 7 – Meter Overflow Error

Table 16 – Software Errors

5.7. Printer Errors

Printer No Communication	The printer is offline due to lost communication with the COAM. Usually due to serial or USB connection being disconnected.
Printer Paper Low	The printer paper is low.
Printer Paper Out	The printer has run out of paper.
Printer Paper Jam	There is a paper jam in the Printer.
Platen Up	The printer platen is opened.
Printer Open	The printer is opened. This is due to the printer not being closed properly. Make sure the printer is pushed all the way back in the COAM and that the paper lid is closed tight.
Printer Misaligned	The printer paper is misaligned.
Printer Offline	The printer is offline due to lost communication with the COAM. Usually due to serial or USB connection being disconnected.

Table 17 – Printer Errors

Section 6 – Preventive Maintenance

In *Section 6* - P*reventive Maintenance* recommendations are general activities that maintain the prodiGi Vu in good working order. Preventive maintenance consists mainly of cleaning the internal components of the prodiGi Vu, as well as utilizing testing utilities embedded into the software to assure that all components are in top shape.

Frequency:
It is recommended to perform the preventive maintenance approximately every three months (90 days). Preventive maintenance may be performed more frequently than the recommended 90 days, but should not be neglected for more than 180 days (6months).

Duration:
The preventive maintenance procedure of the prodiGi Vu will take approximately 30-60min.

Tools Required:

- Compressed air can
- Vacuum cleaner
- Water and soap mix (99 to 1)
- Lint free cloth
- Keys enabling access to all doors
- Technician key
- Cleaning Cards

Section Overview:

- General Cleaning
- Component Testing

6.1. General Cleaning

WARNING: To prevent damage to the COAM always switch the power OFF before performing all maintenance.

Perform the following recommendations to clean each component:

6.1.1. Doors & Locks

1. Ensure all doors open and close easily, adjust lock mechanisms as necessary.
2. Inspect all lock nuts/retainers, tighten, and adjust as necessary.
3. Inspect all door switches ensuring that they are tightly installed and adjust as necessary.

6.1.2. Bill Validator

1. Remove the bill Validator head and cash box from the bill Validator chassis.
2. Inspect for any physical damage and any missing parts such as damaged belts or rollers and scratched sensor lenses. Repair/replace as necessary.
3. Using compressed air, blow the dust and debris from the bill Validator head.
4. Using a non-abrasive cleaner such as water with soap (99 to 1 ratio) dampen a lint free cloth and clean the rollers and sensor lenses ensuring that no liquid is spilled inside the assembly.
5. No calibration is required due to the nature of the bill Validators used in the prodiGi Vu – calibration occurs when firmware is updated.
6. Inspect and clean the bill Validator chassis ensuring that all dirt and debris are removed from the bill path.
7. Re-install the bill Validator head.

6.1.3. Monitor/LCD & Touch Screen

1. Wipe the LCD surface(s) with a lint free cloth with a soap and water mixture.
2. Inspect for damage such as cracks or major scratches.
3. Repair/replace as necessary.

6.1.4. Player Buttons (Mechanical)

1. Wipe the buttons with a lint free cloth with a soap and water mixture.
2. Inspect the buttons and functionality ensuring that none of buttons jam during use.
3. Access the belly door in order to inspect the button assemblies and cabling.
4. Repair or replace any damaged buttons/assemblies.
5. Ensure that all buttons are properly seated within their button assemblies and that all the cables are connected.
6. Close the belly door.

6.1.5. Logic Box/Power Supply

1. Remove the logic box, open the lid, and, using compressed air, blow the dust and debris from the logic box.
2. Re-install the logic box.
3. Using compressed air, blow the dust, and debris from the power supply.

6.1.6. Cabinet

1. Clean the interior of dust and debris – using compressed air and the vacuum cleaner.
2. Open the top door area and clean as necessary.
3. Wipe the interior of the cabinet thoroughly using the soap and water mixture.
4. Clean all debris from vents and fans - using compressed air and the vacuum cleaner.
5. Clean outside of the cabinet using the soap and water mixture.

6.2. Component Testing

With the power ON, access the technician menu and perform the following steps to test each component:

6.2.1. Touch Screen

1. To calibrate the touch screen, select CALIBRATE TOUCH SCREEN at the bottom of the screen.

2. In the event that the touch screen calibration is un-useable by poor calibration, the button panel will have one button that has a lit lamp. This button will initiate the touch screen calibration in the same manner as the CALIBRATE TOUCH SCREEN button.

3. Follow the instructions on the screen.

4. Re-calibrate, re-clean, repair, or replace the touch screen monitor where necessary.

6.2.2. Volume

1. Select OPTIONS, and then VOLUME from the technician menu.

2. Ensure that the volume settings are set to the desired levels and sound mode.

3. Touch the TEST buttons below the volume settings on this screen to test the individual volumes (main game, bonus game, door alarm).

4. Adjust as necessary.

6.2.3. Batteries

1. Select OPTIONS, and then TEST from the technician menu.

2. Select BATTERIES.

3. All batteries displayed must report a PASS.

4. If a battery is reporting a FAIL replace/repair the logic box.

6.2.4. Buttons

1. Select OPTIONS, and then TEST from the technician menu.
2. Select BUTTONS.
3. Press every button on the button panel ensuring that the action is being registered on the screen.
4. Ensure that the button lamp turns OFF and ON when pressed.

6.2.5. Candles and Switches

1. Select OPTIONS, and then TEST from the technician menu.
2. Select CANDLES AND SWITCHES.
3. Turn the AUDIT KEY and ensure it registers on the screen.
4. Turn the TECHNICIAN KEY and ensure it registers on the screen.

6.2.6. Bill Validator

1. Select OPTIONS, and then TEST from the technician menu.
2. Select DEVICES, and then BILL VALIDATOR.
3. Insert one bill of each denomination to ensure the bill Validator is working correctly.
4. Re-clean, replace, or repair the bill Validator where necessary.

6.2.7. Belly Lights (Optional)

1. Select OPTIONS, and then TEST from the technician menu.
2. Select BELLY LIGHTS.
3. Select each color and intensity for each belly light ensuring that the lights match the selection.
4. Replace or repair belly lights where necessary.

6.2.8. Marquee Bezel

1. Select OPTIONS, and then TEST from the technician menu.
2. Select MARQUEE BEZEL.
3. Select each color ensuring that the lights match the selection.
4. Replace or repair LED strips where necessary.

6.2.9. Doors

1. Select OPTIONS, and then TEST from the technician menu.
2. Select DOORS.
3. Open and close all doors listed on the screen ensuring each switch is functional.
4. Repair or replace where necessary.

Appendix A – Back Office Menus Quick Setup Guide

1. SAS Configurations

1. Navigate to **Comm** > **SAS** > **Ports**
2. Enter the following values:

- **SAS Enabled**: Enabled
- **Accounting Denomination**: $0.01
- **Assign Ports > Accounting/Control**: Serial 2 (RS-232)
- **Port Addresses > Serial 2 (RS-232)**: 1

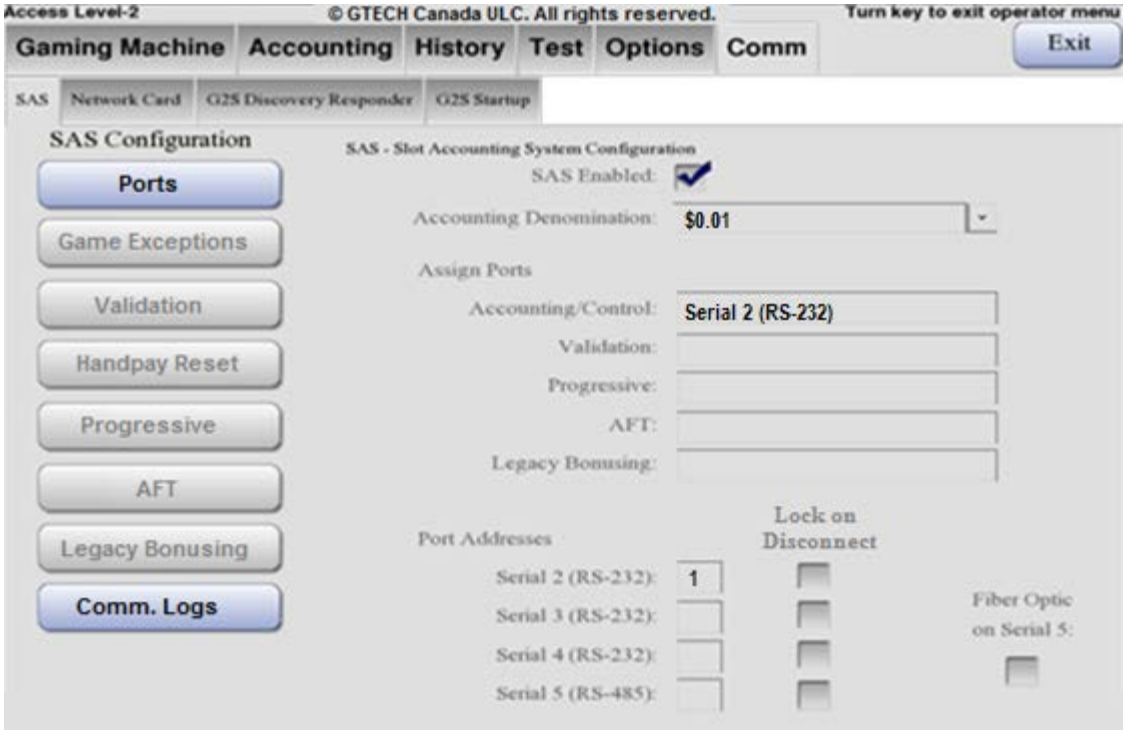

Figure 170 – Ports Configuration

2. Touch Screen Calibration

1. Navigate to **Test** > **Touch Screen**.
2. Touch the screen to begin the test.
3. Touch each of the **plus sign** symbol (crosshair) that appears to calibrate the touch screen.

Figure 171 – Touch Screen Calibration

3. Volume Control

1. Navigate to **Options** > **Volume**.
2. Set the volume as per venue configuration.

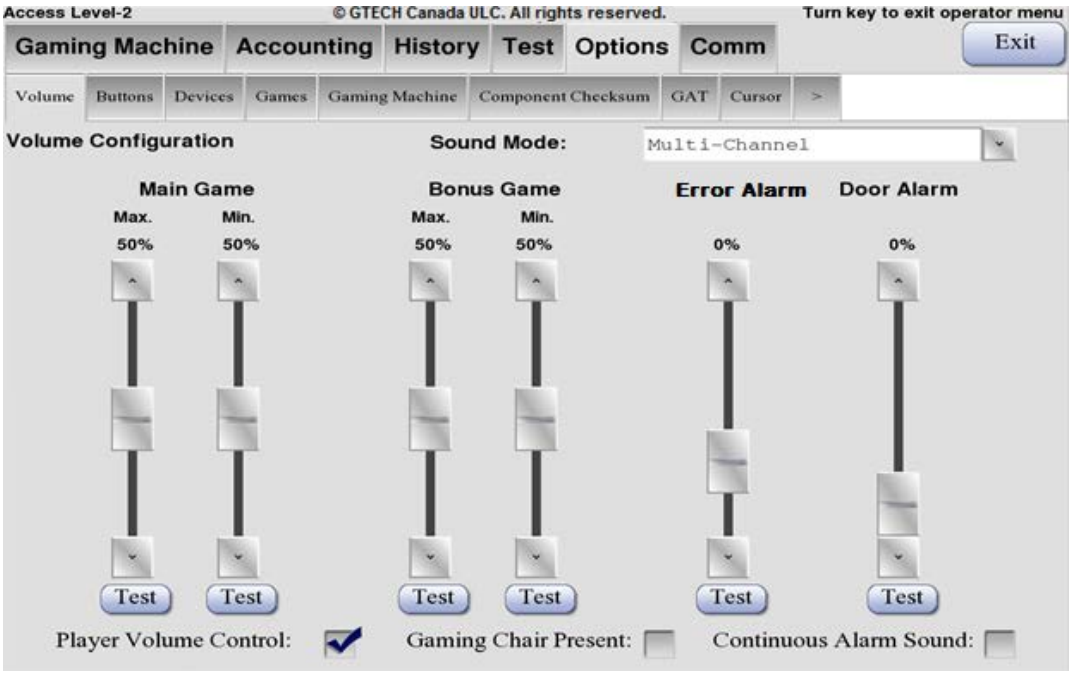

Figure 172 – Volume Configuration