Emax® UPOOV
Entertainment to the MAX

SOUTH AFRICAN CASINO SERVICE MANUAL
ASP & SAS PROTOCOLS

1 CONTENTS

1.1 INTRODUCTION

This document provides technical details of the Emax UP00V machine. Descriptions of the major components are followed by information on how to access and service various components in the system.

The Emax UP00V Electronic Gaming Machine has been designed so that major sub-assemblies or modules are readily accessible and removable for service or replacement. The modular approach means that a section of the machine can be easily removed, and replaced if necessary, without the need for major dismantling on site.

This manual is designed to cover Service and Operation of the Emax UP00V electronic gaming machine.

It covers software and hardware, including game installation and set-ups.

For the purposes of using this manual, when dealing with software the following guidelines should be observed.

> The line buttons displayed on the bottom of the Audit screens and Diagnostics screens in this manual is based on a 25 line game.
>
> For a 3, 5, 9 or 20 line game, please substitute line buttons as the following table and please refer to the line buttons displayed on the bottom of the actual video screen.

LINE BUTTONS	3 Line Game	5 Line Game	9 Line Game	20 Line Game	25 Line Game
1ST LINE BUTTON	Line 1	Line 1	Line 1	Line 1	Line 1
2ND LINE BUTTON	N/A	Line 2	Line 3	Line 3	Line 5
3RD LINE BUTTON	Line 2	Line 3	Line 5	Line 5	Line 9
4TH LINE BUTTON	N/A	Line 4	Line 7	Line 9	Line 20
5TH LINE BUTTON	Line 3	Line 5	Line 9	Line 20	Line 25

1.2 TECHNICAL SUPPORT

Pacific Gaming Pty Limited is dedicated to providing quality service, maintenance and technical support for all of their products.
Please feel free to contact our service department for assistance on +612 9699 9133 between the hours of 8 am to 4 pm AEST.

1.3 SPECIFICATIONS

Dimensions:

Height of Cabinet with Midway	1342 mm
Width	540 mm
Depth	695 mm

Recommended clearance between each machine:	140 mm

Weight:

Midway - unpacked	115 Kg

Power Requirements:

Mains Input Voltage	
Nominal	240V AC
Minimum	210V AC
Maximum	264V AC

Power Consumption:

Idle	290 Watts
Maximum	340 Watts

Frequency:	50 Hz

Mains Input Current:

Idle	1.5 Amps
Maximum	1.8 Amps

Ambient temperature:

	Minimum	Maximum
Storage	0°C	60°C
Operating	0°C	50°C

Relative Humidity:

	Minimum	Maximum
Storage	10%	95%
Operating	20%	90%

Service GPO Outlet

Power Consumption	180 Watts

1.4   EMAX EGM
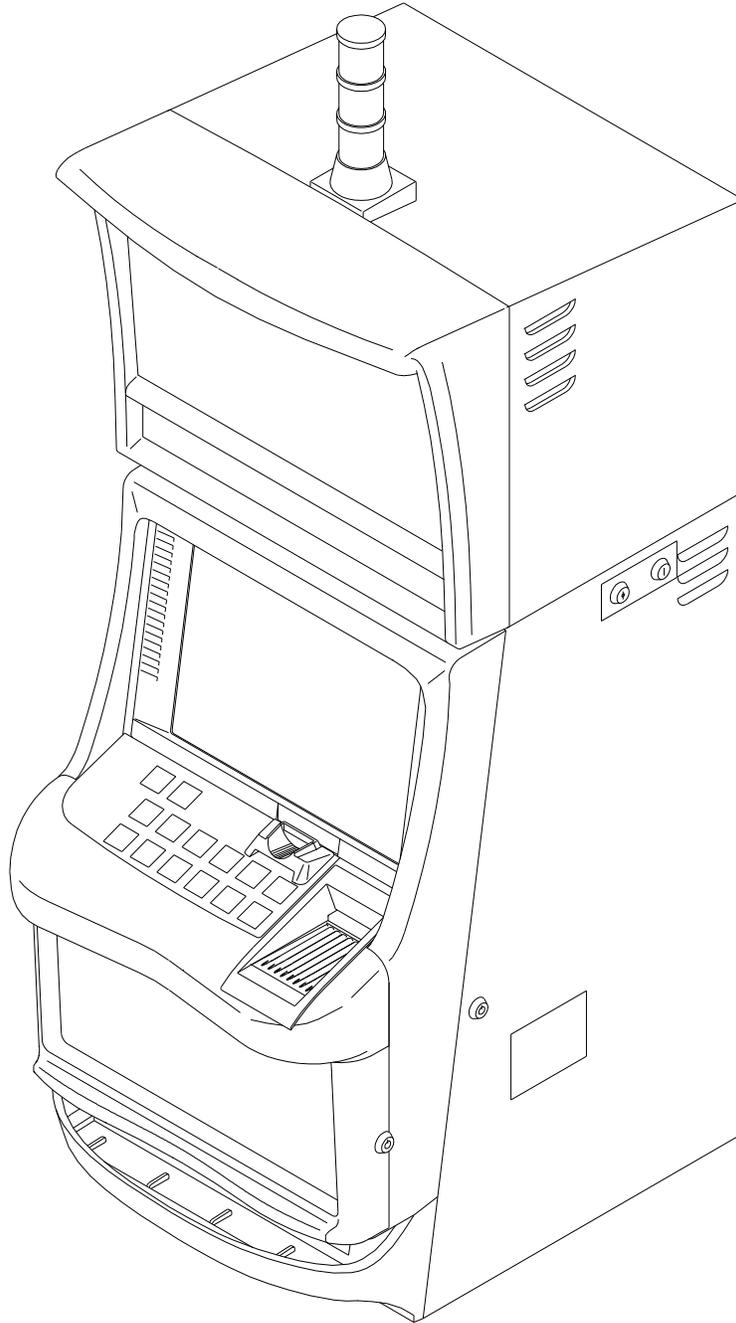
1.5   INSTALLATION

Only qualified/licensed personnel can install, assemble, maintain, inspect and troubleshoot the machine.

1.6	HARDWARE INSTALLATION

1. Unpack Machine.

2. Check for any damage caused by mishandling during shipment.

3. For safety, this electronic gaming machine must be connected to a close, readily accessible power point. Ensure the Machine's ON/OFF Switch is in the OFF position.

4. Place Machine on Console Base, Open Main Door and visually check all plugs and sockets to ensure good connections unplug and remove Hopper.

5. Bolt Machine into correct location.

6. Fit venue locks, connect machine to the Local Network.

7. Replace Hopper.

8. Ensure all screws are replaced to ensure proper operation and earthing.

9. Power Machine up. Machine can now be enrolled and basic functional checks made.

1.7	SOFTWARE INSTALLATION

1.7.1   WHEN IS RAM CLEAR PROCEDURE REQUIRED?
Ø First installation.
Ø To clear System Errors – Self Audit Error, RAM Error, etc.

1.8   RAM CLEAR PROCEDURE

1. Open main door and open processor door.
2. Press SW1 RESET on the memory board for approximately 5 seconds.
3. Turn main power switch on - "OUT OF SERVICE - RAM ERROR" will appear on the monitor screen.

```
┌─────────────────────────────────────┐
│                                     │
│                                     │
│                                     │
│                                     │
│          OUT OF SERVICE             │
│    RAM ERROR - MEMORY BOARD         │
│                                     │
│                                     │
│                                     │
│                                     │
└─────────────────────────────────────┘
```
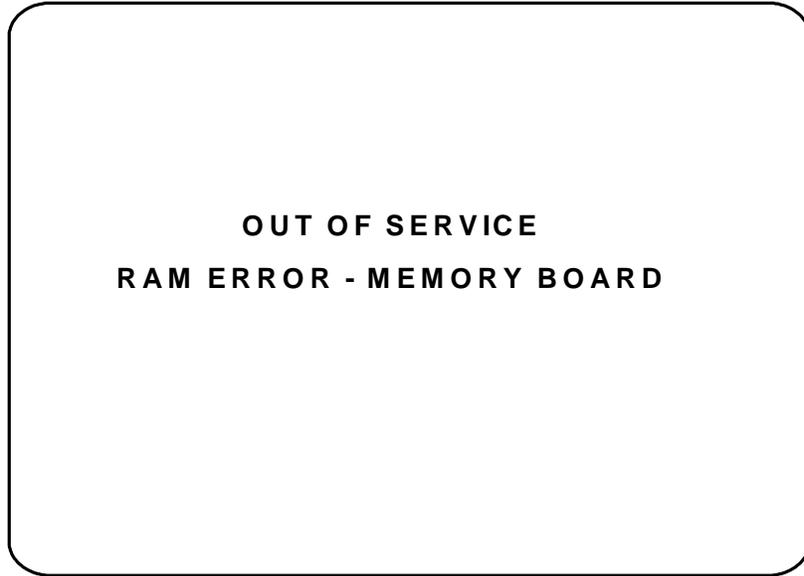
4. Turn the Reset Switch on the side of the machine anti-clockwise – the AUDIT MODE MAIN MENU will appear on the screen.

```
┌─────────────────────────────────────────────┐
│ AUDIT MODE - MAIN MENU                       │
│ ─────────────────────────────────────────── │
│ FIRMWARE   ID:                               │
│ FIRMWARE VER:                                │
│ G A M E   NO:                                │
│ G A M E  VAR:                                │
│                                              │
│   ┌──────────────────┐   ┌──────────────────┐│
│   │ SOFTWARE METERS  │   │  HOPPER REFILL   ││
│   └──────────────────┘   └──────────────────┘│
│   ┌──────────────────┐   ┌──────────────────┐│
│   │  GAME RECALL     │   │  MACHINE SETUP   ││
│   └──────────────────┘   └──────────────────┘│
│   ┌──────────────────┐      ┌──────────┐     │
│   │ MACHINE ID & STATUS│    │   EXIT   │     │
│   └──────────────────┘      └──────────┘     │
│   ┌──────────────────┐                       │
│   │ GAME STATISTICS  │                       │
│   └──────────────────┘                       │
│                                              │
│ ──────────────────────────────────────────── │
│ POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE │
└─────────────────────────────────────────────┘
```
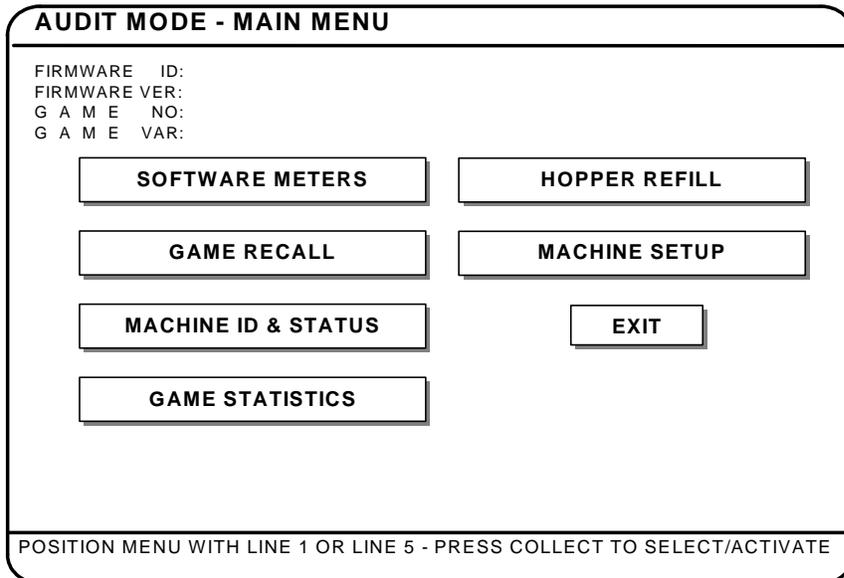
5. Select the MACHINE SETUP menu item and the MACHINE SETUP menu will be displayed.

```
┌─────────────────────────────────────────────────────┐
│ AUDIT MODE – MACHINE SETUP                            │
│                                                        │
│                                                        │
│               ┌─────────────────────┐                 │
│               │     RAM RESET        │                 │
│               └─────────────────────┘                 │
│               ┌─────────────────────┐                 │
│               │    SOUND SYSTEM      │                 │
│               └─────────────────────┘                 │
│               ┌─────────────────────┐                 │
│               │    TOWER LAMPS       │                 │
│               └─────────────────────┘                 │
│               ┌─────────────────────┐                 │
│               │    TOUCH SCREEN      │                 │
│               └─────────────────────┘                 │
│                  ┌───────────────┐                     │
│                  │     EXIT       │                    │
│                  └───────────────┘                     │
│                                                        │
│                                                        │
├─────────────────────────────────────────────────────┤
│ POSITION MENU WITH LINE 1 OR LINE 5 – PRESS COLLECT   │
│ TO SELECT/ACTIVATE                                     │
└─────────────────────────────────────────────────────┘
```
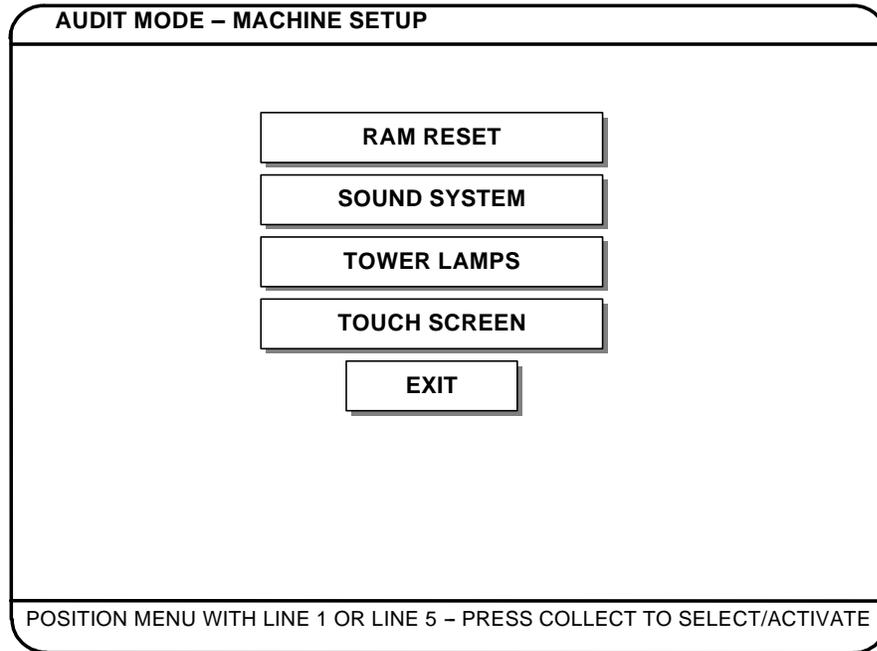
6. Select the CONFIGURE/ RAM RESET menu item and the CONFIGURE screen will be displayed.

```
AUDIT MODE – CONFIGURE                                    SCREEN 1 OF 1

                          RAM CLEAR SETUP DATA

       MACHINE SERIAL NUMBER (GMID)                   1
       HOST COMMUNICATION ADDRESS  (1 - 127)          N.A.
       TOKEN/COIN DENOMINATION      (CENTS)           100  (NONE = CASHLESS ONLY)
       BASE CREDIT VALUE            (CENTS)           1
       VARIATION                                      99   (88.09%)
       BET BUTTON CONFIGURATION                       1, 2, 5, 10, 40
       CASHLESS TRANSFER FROM HOST                    YES
       GAMBLE ENABLE                                  YES
       DATE (YYYY / MM / DD)                          2003 / 05 / 31
       TIME  (HH : MM : SS)                           12 : 30 : 00
       COIN VALIDATOR TYPE                CONDOR PLUS CP133
       HOPPER TYPE                                    GM
   *   CANCEL CREIT LEVEL           (COINS)           100  (0 = HAND PAY)
       HOPPER REFILL AMOUNT         (COINS)           500
       HOPPER LEVEL LOW LIMIT       (COINS)           0    (0 = DISABLE)
       BONUS / MULTIPLIER WIN FROM HOST               YES
       ALLOW PLAYER TO CANCEL HAND PAY                NO
       RESET JACKPOT TO CREDIT BY HOST                N.A.
       MAX RESET JACKPOT TO CREDIT       (R)          N.A. (0 = DISABLE)
       PROTOCOL                                ASP5000H
       SECURITY LEVEL                            HIGHEST
   *   JACKPOT HAND PAY LIMIT            (R)          0.00 (0 = DISABLE)
   *   CELEBRATION WIN LIMIT            (R)           0.00 (0 = DISABLE)
       NOTE ACCEPTOR                            GPT V2.2
       R10    BANKNOTES ACCEPTED                      YES
       R20    BANKNOTES ACCEPTED                      YES
       R50    BANKNOTES ACCEPTED                      YES
       R100  BANKNOTES ACCEPTED                       YES
       R200 BANKNOTES ACCEPTED

       THE MAIN DOOR MUST BE OPEN TO PERFORM A RAM RESET.
   *   THE MAIN DOOR AND LOGIC DOOR MUST BE OPEN TO MODIFY.
       REQUIRES THE LOGIC DOOR OPEN TO MODIFY AT ALL TIMES.

 POSITION CURSOR WITH LINE 9 OR LINE 20 – PRESS LINE 25 TO CHANGE
 PRESS LINE 1 AND COLLECT TO RESET RAM AND EXIT
```

- The main door must be open to perform a RAM reset.
- To modify the machine configuration both the main and logic cage doors must be open.
- Use the designated buttons to modify the setup options as required.

7. Reset the machine with the following sequence, press LINE 1 and hold, and then press COLLECT.
8. Game symbols will appear on the screen after "DECODING IMAGES" and "DECODING SOUNDS" messages displayed.

1.8.1   How to set Jackpot Hand pay Limit & Celebration Win Limit

A traditional gaming machine which has no cashless transfer capability has only one jackpot limit. A single win which is bigger or equal to this jackpot limit will be hand paid by an attendant to avoid hopper coins running out.
However a modern gaming machine which has cashless transfer capability can transfer a single win which is bigger or equal to the jackpot limit out to the host or smart card without actual hand pay.
Only the rare but real large win which is much bigger than the normal jackpot limit will be actually hand paid.
So we need two jackpot limits where the lower jackpot limit called 'celebration win limit' and the upper jackpot limit called 'jackpot hand pay limit'.

- Jackpot hand pay limit: only used in cashless mode and if a single win is bigger or equal to this limit, then an attendant will hand pay.
- Celebration win limit: if a single win is bigger or equal to this limit, then the operation differs depending on cashless mode or non-cashless mode.
  In cashless mode, the win amount will be cashless transferred out to the host or smart card without actual hand pay.
  In non-cashless mode, the win amount will be hand paid by an attendant because the win amount can not be cashless transferred out.

There is another limit called 'credit limit'. The credit limit is needed to disable the coin acceptor and note acceptor when the credits on the gaming machine exceed this limit.
This will avoid the credit meter on the gaming machine overflow the maximum number of displaying digits on the screen.
The credit limit is automatically set depending on the cashless mode or non-cashless mode.
In cashless mode, the credit limit will set same as the jackpot hand pay limit.
In non-cashless mode, the credit limit will be set same as the celebration win limit.
If both of the jackpot hand pay limit and the celebration win limit are disabled, then the credit limit will be set same as the maximum jurisdictional credit limit (if any).

In SAS protocol, the automatic celebration win or credit limit cashless transfer out may not work. If the SAS protocol supports automatic cash out to the host function (long poll 0x65), then automatic cash out to the host will work.

- Sun International Group: SAS 4.05 customized version is used. There are two kinds of SAS 4.05 protocol. One is standard version which is used in IGT/Acres system and another is customized version which is used in GRIPS system.
  Only the customized SAS 4.05 version will support automatic cash out to the host.
- Tsogo Sun Group: SAS 4.02 standard version is used. Automatic cash out to the host will not be supported. As a result, it is recommended to disable the celebration win limit and use the jackpot hand pay win limit only.
  If celebration win limit is used, then the celebration win will be hand paid anyway.

1) CASHLESS OPERATION ONLY
Token / Coin Denomination = None
Cashless Communication = Yes

Let us assume that the jackpot hand pay limit is R1000.00 and the celebration win limit is R500.00.
- Cashless mode: if a single win is bigger or equal to R1000.00 (e.g. jackpot win), then the win amount will be hand paid. If a single win is bigger or equal to R500.00 but less than R1000.00 (e.g. celebration win), then the win amount will be cashless transferred out.
- Non-cashless mode: Not applicable because the gaming machine configured as cashless operation only.
- Credit limit: if (a single win + current credit) exceeds the credit limit, then the win amount will be cashless transferred out.

```
              A Single Win

                   |
                   v
          Win >= JP Limit  ----Yes---->   Jackpot Hand pay
                   |                          JPM += Win
                  No
                   |
                   v
          Win >= Cel.Limit ----Yes---->   Celebration Lockup
                   |                         Cashless Out
                  No                            TO += Win
                   |                            CLO += Win
                   v
          Cr.Limit = JP Limit
                   |
                   v
          Cr + Win > Cr.Limit ---Yes--->   Cashless Out
                   |                           TO += Win
                  No                           CLO += Win
                   |
                   v
              Cr += Win
              TO += Win
```

Legend

Win: any single win
JP Limit: Jackpot limit (Hand pay win limit)
Cel.Limit: Celebration win limit
Cr.Limit: Credit limit
HP Limit: Hopper pay limit
JPM: Jackpot meter
TO: Win meter except jackpot
CLO: Cashless out meter
CR: Current credits
CO: Coin out meter
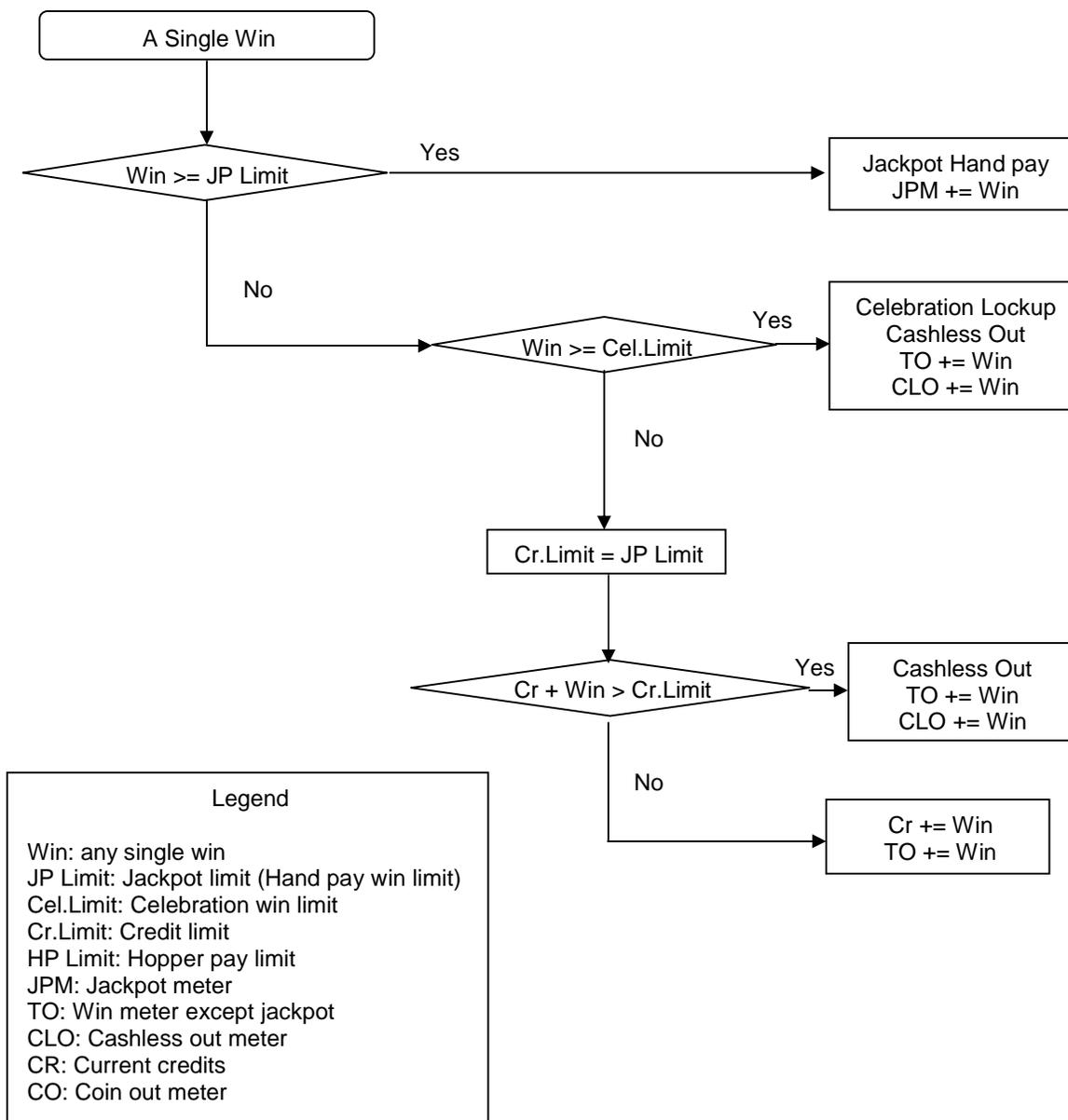
2) MIXED (CASHLESS & COIN) OPERATION
Token / Coin Denomination = other than 'None'
Cashless Communication = Yes

Let us assume that the jackpot hand pay limit is R1000.00 and the celebration win limit is R500.00.

- Cashless mode: if a single win is bigger or equal to R1000.00 (e.g. jackpot win), then the win amount will be hand paid. If a single win is bigger or equal to R500.00 but less than R1000.00 (e.g. celebration win), then the win amount will be cashless transferred out.
- Non-cashless mode: if any single win is bigger or equal to R500.00 (e.g. celebration win), the win amount will be hand paid.
- Credit limit: if (a single win + current credit) exceeds the credit limit, then the win amount will be cashless transferred out during cashless mode. In non-cashless mode, the win amount will be hopper paid or hand paid depending on the cancel credit limit. In non-cashless mode, any win amount less than the token value (e.g. residual credit) will be ignored to avoid frequent hand pay for the small win by an attendant. In cashless mode, the residual credit is not ignored and will be cashless transferred out.

```
                    ┌─────────────────────┐
                    │    A Single Win     │
                    └─────────────────────┘
                              │
                              ▼
              ◇ Win >= JP Limit ◇────Yes────────────────►  Jackpot Hand pay
                              │                             JPM += Win
                             No
                              ▼
              ◇ Smart Card inserted? ◇──Yes──► ◇ Win >= Cel.Limit ◇──Yes──► Celebration Lockup
                              │                                              Cashless Out
                             No                              │               TO += Win
                              ▼                                              CLO += Win
              ◇ Win >= Cel.Limit ◇──Yes──► Hand pay          ▼
                              │            JPM += Win     Cr.Limit = JP Limit
                             No                              │
                              ▼                              ▼
              Cr.Limit = Cel.Limit              ◇ Cr + Win > Cr.Limit ◇──Yes──► Cashless Out
                              │                              │                   TO += Win
                              │                             No                   CLO += Win
                              │                              ▼
                              │                          Cr += Win
                              │                          TO += Win
                              ▼
   ◇ Cr + Win > Cr.Limit ◇──Yes──► ◇ Win > HP Limit ◇──Yes──► Hand pay
                              │              │                  JPM += Win
                             No             No
                              ▼              ▼
                         Cr += Win      Hopper Pay
                                        TO += Win
                                        CO += Win
```
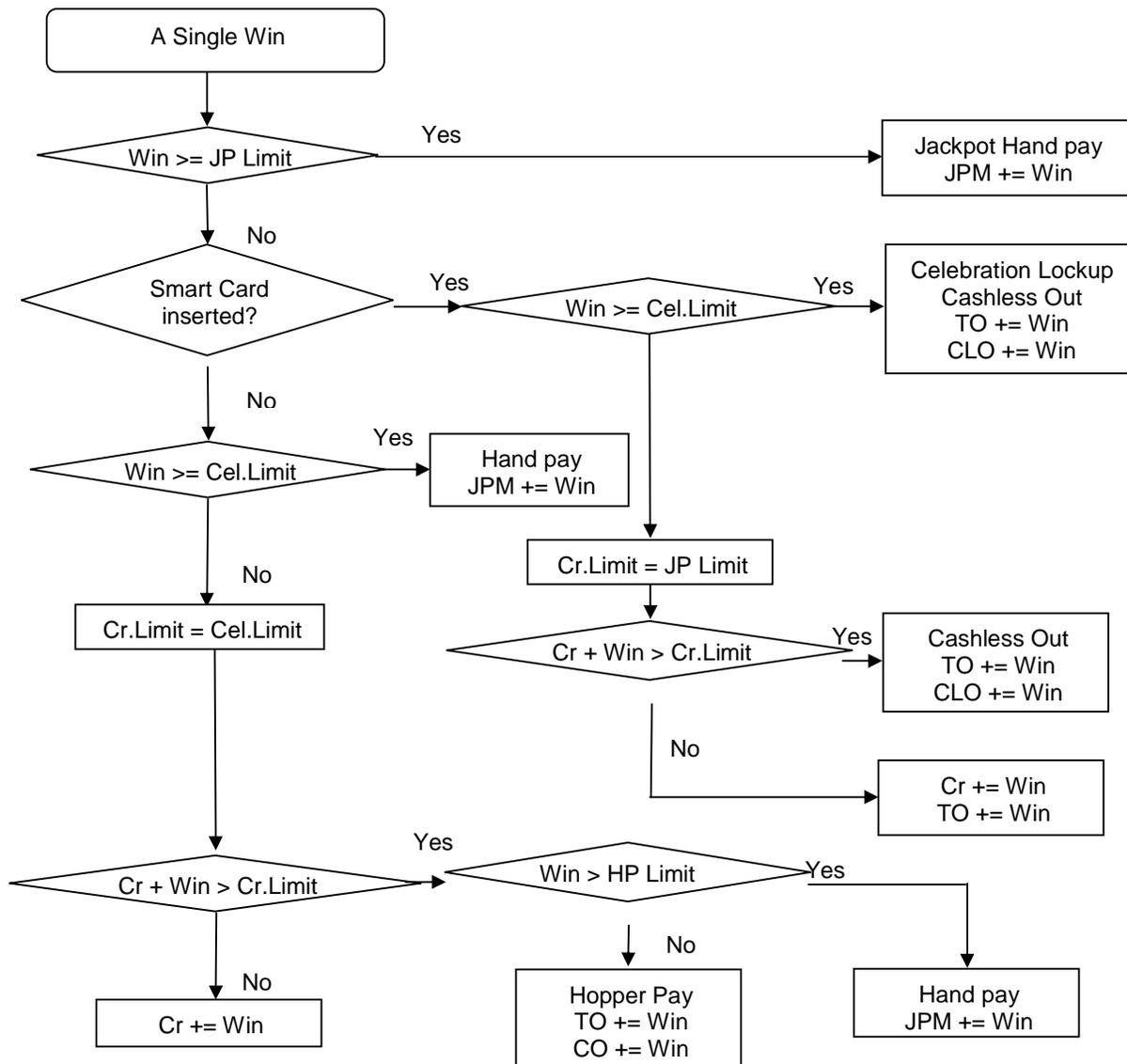
3) COIN OPERATION ONLY
Token / Coin Denomination = other than 'None'
Cashless Communication = No

Jackpot hand pay limit will be disabled in non-cashless operation only.
Let us assume that the celebration win limit is R500.00.
- Cashless mode: Non applicable because the gaming machine configured as non-cashless operation only.
- Non-cashless mode: if any single win is bigger or equal to R500.00 (e.g. celebration win), the win amount will be hand paid.
- Credit limit: if (a single win + current credit) exceeds the credit limit, then the win amount will be hopper paid or hand paid depending on the cancel credit limit. Any win amount less than the token value (e.g. residual credit) will be ignored to avoid frequent hand pay for the small win by an attendant.
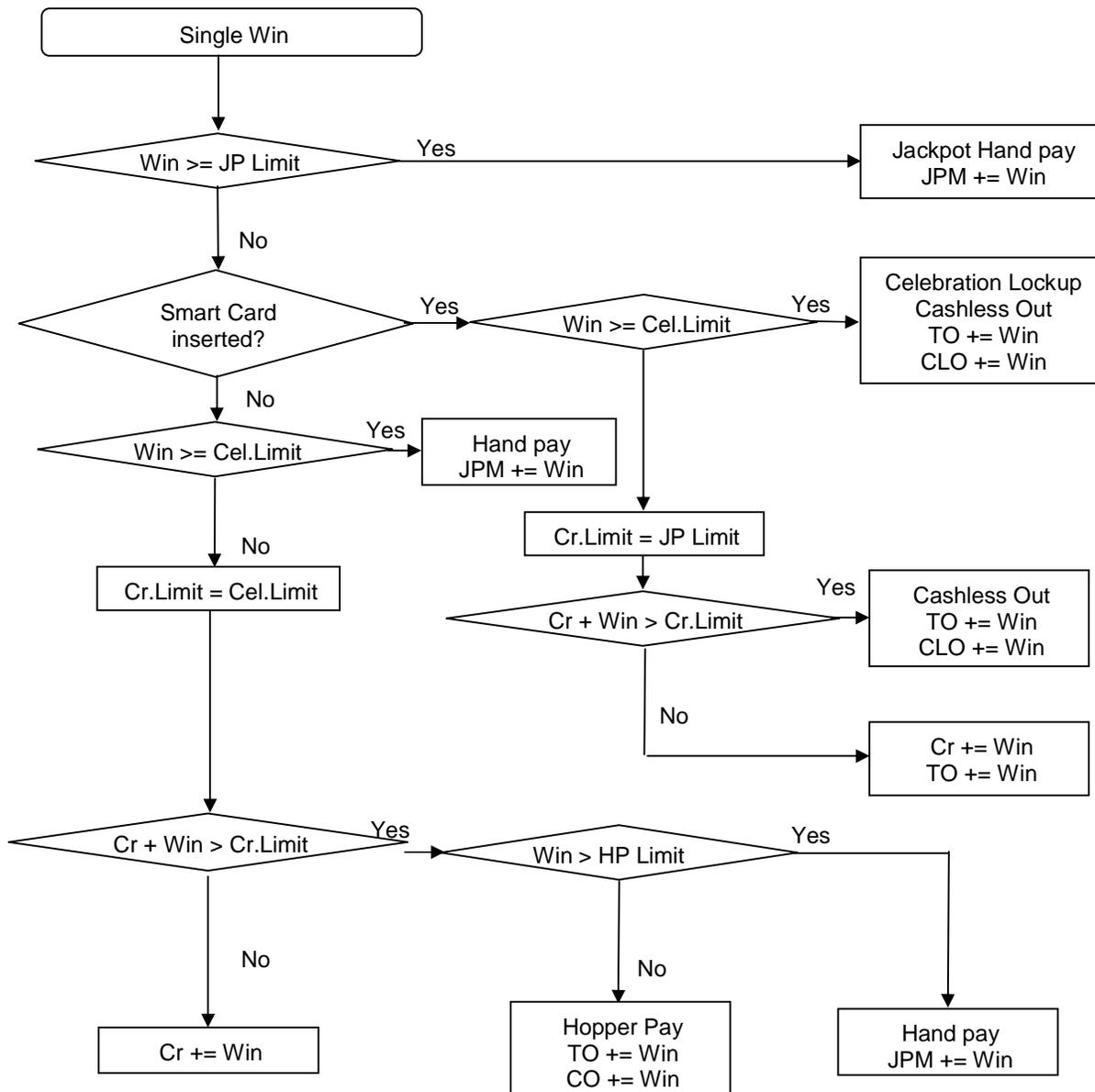
1.9   EMAX CONVERSIONS

EPROMs

1. Remove U9 to U16 on Mother Board and replace with new combination EPROM's.

NB: Number of EPROM's is game dependant

2. Perform RAM clear procedure as described in Section 1.8.


ARTWORK

Top
1. Open Main door.

2. Remove Plastic decoration Frame.

3. Slide artwork up then bottom end out.

4. Replace Plastic decoration frame.

5. Close main door.

Bottom
1. Open Belly Door lock assembly.

2. Open Belly Door.

3. Slide artwork out and replace with new artwork.

4. Close Belly Door.

5. Close Belly Door lock assembly.

1.10 TECHNICAL INFORMATION

1.11   LOCATION OF EXTERNAL COMPONENTS

No.1 TOP BOX ASSEMBLY

No.7 MONITOR ASSEMBLY

No.6 DOOR ASSEMBLY

No.2 CABINET ASSEMBLY (1/2)
No.3 CABINET ASSEMBLY (2/2)

No.5 CONTROL PANEL ASSEMBLY

No.8 GM HOPPER (1/2)
No.9 GM HOPPER (2/2)

No.4 BILL VALIDATOR UNIT
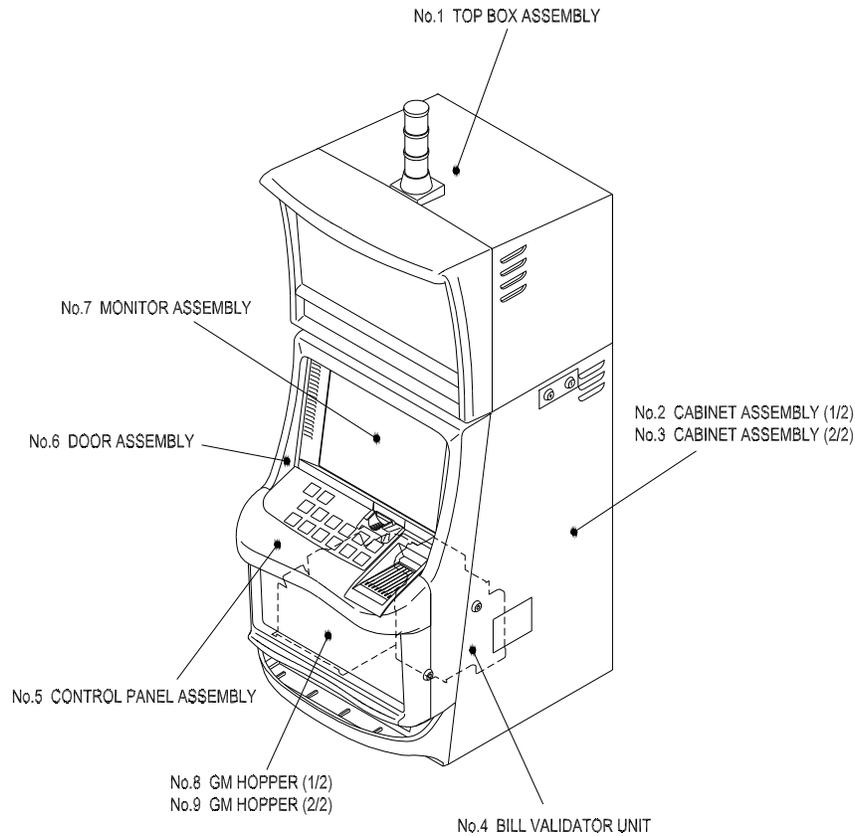
EMAX consists of several major assemblies or modules, which are easily accessible for servicing.

w**Main Cabinet** - Enclosing all internal components and speakers.

w**Main Door** - Contains artwork, coin acceptance mechanism, play buttons and lighting.

w**Logic Unit** - Contains all major electronics, controls all game functions and communication.

w**Main Power Supply** - Provides power for all electronics, lamps, switches and optics.

w**Monitor** - SVGA grade computer flat monitor, all controls are located on the front panel.

w**Hopper** - Handles coin out functions.

	1.12	**BUTTONS**

The buttons on the Emax have two types of operations. In the Play Mode the buttons are used for selecting the option stated on the button legend. In Audit and Test Mode the buttons are used to make selections in the various Menus. These selections are not shown on the buttons themselves, but are illustrated on the bottom of the screen.

Button	Description
COLLECT	**COLLECT BUTTON** When the Collect button is pressed with the Credit Meter value less than or equal to the Hopper Pay Limit, all credits are paid by coins from the Hopper. If an amount over the Hopper Pay Limit is to be paid out, the machine locks up and enters Cancel Credit Mode. An attendant clears these credits.
GAME RULES	**GAME RULES** When the Game rules button is pressed the player is presented with a series of screens showing a complete set of rules for the game being played.
BET 1 PER LINE	**BET BUTTONS** Pressing one of the five bet buttons will determine the number of bets per line to be staked (actual bet per line is game dependant).
PLAY 5 LINES	**PLAY BUTTONS** Pressing one of the five line buttons will determine the number of lines to be played in the next game and start the game (actual number of lines are game dependant).
TAKE WIN START FEATURE	**TAKE WIN/ START FEATURE BUTTON** Selecting Take Win will add the total of a win to the Credit Meter. The button is active after a winning game and after any successful Double Up attempt. Selecting Start Feature will
RED PLAY1 LINE	**RED / PLAY BUTTON** This button is used for selecting Red in the Double Up game. Selecting Play 1 Line will play 1 line in the next game and start the game (actual number of lines are game dependant).
BLACK PLAY25 LINE	**BLACK / PLAY BUTTON** This button is used for selecting Black in the Double Up game. Selecting Play 25 Line will play 25 lines in the next game and start the game (actual number of lines are game dependant).
GAMBLE RESERVE	**GAMBLE / RESERVE BUTTON** Pressing Reserve will display the message 'MACHINE RESERVED' for 3 minutes if it is not pressed again. It works like a toggle button. By selecting the Gamble button the player can attempt to DOUBLE UP a win by pressing this button. The player then selects RED or BLACK. The object is to match the color of the card displayed face down on the screen. Successful attempts will double the win.

1.13 <u>SWITCHES</u>

MAIN ON/OFF SWITCH (Located at the front left hand side)

Used to switch on the main supply to the machine.

POWER SAVE SWITCH (Located on the right hand external side of the cabinet)

This switch is jurisdiction dependant. When activated, power is available to the logic boards, communications interfaces and all security sensing devices while the monitor and other lighting may have power removed. No coins or notes will be accepted.

FOIC COMMS POWER SWITCH – QLD only (Located on Main Power Supply at the front right hand side)

This switch is only operational in QLD. This switch controls the power to the Fibre Optics Interface card.

AUDIT MODE KEY SWITCH (Located on right hand side of cabinet)

Used to enter Audit Mode. Insert the Audit Key and turn it clockwise.

RESET/TEST KEY SWITCH (Located on right hand side of cabinet)

Used to reset the machine after a cancel credit or an error has occurred. Insert the Reset Key and turn it anticlockwise to clear the error message or Cancel Credit.

When 'door open' and no credits, this key switch is also used to enter the Test Modes

MAIN DOOR OPTIC (Located on right hand side of Main door & inside Cabinet)

The door optic is used to detect if a DOOR OPEN condition exists. The emitter is mounted on the door while the photo transistor is mounted inside the cabinet.

MAIN DOOR SWITCH

The Main Door Switch is located at the top of the locking bar and works in conjunction with the Door Optic to alert the program that the machine is in the Main Door Open / Closed condition.

BELLY DOOR SWITCH (Located on machine door)

This switch alerts the program that the Belly Door has been opened.

LOGIC UNIT SWITCH OR SECURITY CAGE SWITCH (Located on Logic Unit)

This switch is connected to the electronic circuitry with a battery back up. This switch is located on the Logic Unit, and it detects if the Logic Door (Processor Door) has been opened, with or without power.

CASH BOX SWITCH (Located in Cashbox)

This switch detects if the Cashbox door is open / closed.

HOPPER COUNT OPTIC (Located on Hopper)

This switch is located at the coin exit on the hopper, and it counts coins that are being collected.

1.14   LOCATION OF INTERNAL COMPONENTS

SUMMATION OF SUB-SYSTEM COMPONENTS

	COMPONENT	LOCATION	MOUNTING
A	MONITOR	Centre Shelf	Slide-in chassis, screw fixings
B	LOGIC UNIT	Back of Cabinet (upper)	Lockable cradle assembly
C	NOTE ACCEPTOR	Front Right hand side	Screwed to cradle
D	HOPPER	Base of Cabinet (front)	Steel slides on Hopper & base
E	COIN VALIDATOR	Main Door	Cradle assembly with spring clips
F	DIVERTER ASSY	Behind Main Door	Attached to coin validator
G	POWER SUPPLY	Rear of Cabinet (under Logic unit)	Screwed to rear floor of machine

1.14.1 MAIN DOOR

The Main Door houses artwork, play buttons, coin handling components and fluorescent lighting. Coins are rejected from the coin acceptor during actual game play, a collect sequence, or during an Error Condition or Play Suspended Mode. Coins are directed by a solenoid driven Coin Diverter to either the Hopper or Cashbox area, depending on the current Hopper level. The various Play Buttons provide the player input for the game. They are also used in many of the Audit and Maintenance functions.

1.14.2 CONDOR

The coin validator has been pre-programmed during machine manufacture to accept one particular denomination.

As a coin passes a set of detect coils a pulse or "coin signature" is generated which is compared against a set of pre-programmed reference values. If the signature is correct a solenoid is energised inside the validator and allows the coin to enter into the machine.

The coin validator is fitted with three internal optics:
1)   Coin Detect Sensor - allows the validator process to commence.

2)   Coin Gone Sensor - sends signal to credit lines.

3)   Coin Direction Sensor - detects direction of coin

   (Anti yo-yo).

1.14.3 MECHANICAL DIVERTER

The coin diverter has internal optics:

1)   Coin Detect Sensor - allows the separator processes coin either to hopper or cashbox.

1.14.4 LOGIC UNIT

The Pacific Gaming Emax Logic Unit utilises a standard PC AT platform with a combination of commercially available and custom designed circuit boards to provide a reliable and functional gaming machine.

The Emax utilises a custom "Gaming BIOS" and the system operates in an embedded ROM based diskless environment.

Inputs and outputs from the Logic Unit are optically isolated to prevent noise and interference affecting the logic circuitry.

The Logic Unit board sets are as follows:-

1.14.5 MOTHERBOARD (DPX-80)

The motherboard is based around the CYRIX 6 x 86 300 MHz or 333 MHz device, and represents a standard "integrated" system operating (less unwanted functions) in a modified PC configuration.

Fitted on the motherboard is a start-up BIOS EPROM which redirects information to the Game EPROM. This EPROM does not need to be replaced for a Game EPROM change.

1.14.6 I/O BOARD

The IO BOARD controls Input and output signals

Jumper switches on IO Board:
1. JP7 and JP8 (External Output Port Isolation): If using the isolated power and ground, this jumper should be set to position 1-2. If using the System Supplies (VCC and GND), this jumper should be set to position 2-3. Set to position 2-3 by default.
2. JP1 (External Input Port Isolation): If using the isolated power and ground, this jumper should be set to position 1-2. If using the System Supplies (VCC and GND), this jumper should be set to position 2-3. Set to position 2-3 by default.
3. JP3: Open to save battery during long term storage. Must be closed to enable the battery that saves the Logic-door status
4. JP5: Open by default. Close this jumper will cause a reset if the battery or VCC fail.

LED Indicators on IO Board:
1. LED1: ON indicates Battery failed.
2. LED2: ON indicates Supply Voltage (VCC) is under Reset Threshold (typically 4.65V).

1.14.7 MEMORY BOARD

The MEMORY BOARD stores gaming programs and data.

Jumper switches on Memory Board:
1. J1 B1: Open to save battery during long term storage. Must be closed to enable the batteries for the back-up Ram bank1
2. J2 B2: Open to save battery during long term storage. Must be closed to enable the batteries for the back-up Ram bank2
3. J3 W (Watchdog enable): Must be closed when the watchdog timer is fully implemented in the game software. Only can be opened during software developing in emulator
4. J4 A (RAM Selection): Open by default for the SRAMs populated on the board are 128K x 8 in size. When 512K x 8 devices are used, this jumper should be left close.
5. J5 O (ROM Selection): Open by default for the EPROM's populated on the board is 2Mb x 16 in size. When 1Mb x 16 devices are used, this jumper should be left close.

LED Indicators on Memory Board:
1. LED1 VB1: ON indicates Bsttery1 failed.
2. LED2 VB2: ON indicates Bsttery2 failed.
3. LED3 Sup Low: ON indicates Supply Voltage (VCC) is under Reset Threshold (typically 4.65V).

1.14.8 COMMUNICATIONS BOARD (jurisdiction dependant)

This board supplies 6 additional RS-422 communication ports. Port 1 is bi directional.

1.14.9 BACKPLANE BOARD

The BACKPLANE BOARD provides the connections to other PCB's.

LED Indicators on Backplane:
1. LED1-6: ON indicates VCC, 12VDC, -12VDC (off by default), 5VDC, 12VDC and 24VDC on in order.

1.14.10   MONITOR

The video monitor is a Jean 19" SVGA model number: JD199FA. It is connected to the motherboard via a DSUB15 connector and shielded multi core cable.

The monitor has an auto bias circuit, which eliminates the need for color set-up procedures. This circuit compensates for picture tube drift, which normally causes the color balance to become unbalanced.

The monitor power supply is a high efficiency switch mode type. It does not isolate the incoming AC power and requires an isolation transformer.

All adjustments are done by OSD (on screen display menu). See Adjustment Procedure in appendix at rear of service manual.

1.14.11   HOPPER

The Hopper performs coin out function of the machine. All functions are under software control. A Photo Optic Sensor counts coins exiting the Hopper.

Features of the Hopper are:

w   High speed dispensing.

w   Compact design.

w   Dispenses up to the last coin.

w   Prevention of coin overruns (extra coin out).

Inside the Hopper bowl is a Conduction Probe. Once coins reach this probe and remain in contact with this probe for more than two (2) seconds, the diverter solenoid will divert the coins into the Cashbox.

Software monitors the following: -

w   Hopper Refill

w   Hopper Full (Hopper level at which coins are diverted to the Cashbox).

w   Coins over dispensed (extra coin out).

w   Hopper Empty / Jam.

1.15   SYSTEM BLOCK DIAGRAM

The following block diagram encompasses all the relevant sub systems for the Emax machine:
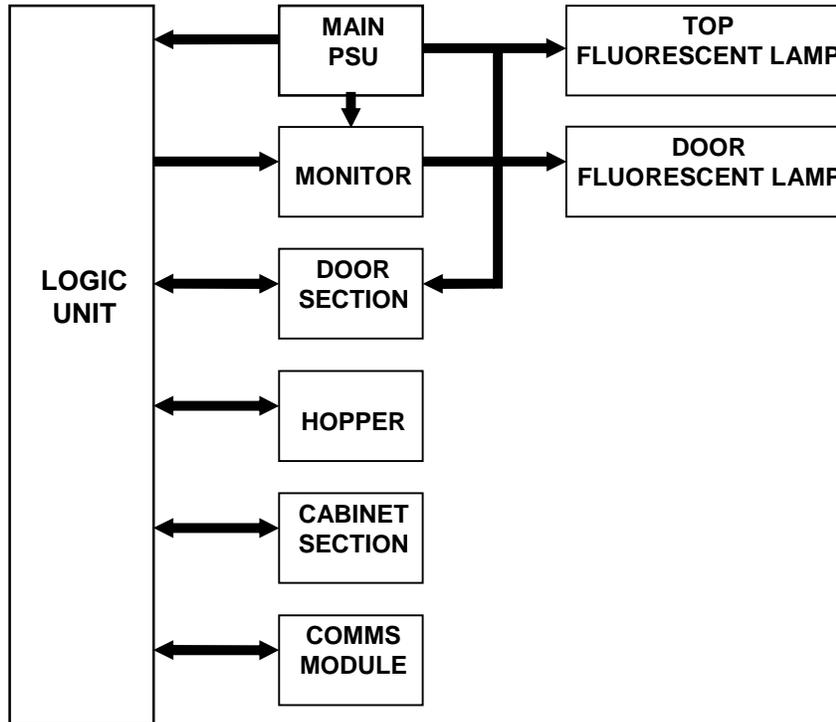
1.16   SERVICING OF MAJOR COMPONENTS

** WARNING – Please ensure the Power Supply is <u>switched off at all times</u> when servicing any module/s on the Emax machine.

1.16.1   MONITOR

The Monitor is located directly behind the cabinet door. It is run by the Power Supply which provides 240VAC.

<u>Removal</u>
The monitor is held in place with six (6) screws. The screws are located towards the outer corners of the monitor assembly, two on top and four on the bottom. Remove the six screws and slide monitor out across shelf.

ADJUSTMENTS

It is the responsibility of the technicians to ensure that adjustments are made in the field. A PCB is located below the CRT at the front left hand side of the chassis, which provides adjustments for all available settings via an onscreen display. Details are contained in appendix at rear of service manual.

1.16.2   LOGIC UNIT

The Logic Unit area consists of 4 PCB's of the [DPX-80 Motherboard], the [MEMORY BOARD], the [IO BOARD], and the [BACKPLANE BOARD]. These PCB's are fire-retardant, and have electronic devices (such as IC's) on their surfaces.

The [DPX-80] directly outputs picture signals to the [MONITOR], and sound signals to the [SPEAKERS].

The [MEMORY BOARD] stores gaming programs and data.

The [IO BOARD] controls I/O signals.

The [BACKPLANE BOARD] provides the connections to other PCB's.

LOGIC UNIT - HANDLING & SAFETY
The EMAX Logic Unit is located below the Monitor shelf. This area contains the motherboard, memory board; I/O board and Communications board (NSW only).The following steps provide a simple and safe method when removing the Logic Unit components:

Step 1. Open Main Door.

Step 2. Switch power off (located at left hand front corner of machine).

Step 3. Remove Hopper Unit

Step 4. Open the lock of the logic unit by turning the key anti clockwise.

Step 5. Put one hand on either corner of the board to be removed and gently pull towards the front of the machine. The board will slide out on rails that are located either side of the board.

Step 6. The preceding steps must be reversed when replacing a Logic Unit component.

1.16.3 POWER SUPPLY

As illustrated below, the power Supply has a basic function of supplying different voltages to various sources on the EGM.

Three power supplies and a power save PCB are contained in a housing located at the back of the cabinet. The functions of the PCB are distribution of power, transient protection and a power save function.

All power supplies are switch mode that have over voltage and short circuit protection.

The fuse fitted on the outside of the power supply is a 240V, 6.3 Amp slow blow, 3AG type fuse.

The following table represents the various output voltages of the Power Supply:

OUTPUT	FUNCTION
240 Volts AC	Monitor and Fluorescent Lamps.
24 Volts DC	Isolated output to drive Button Lamps, Hopper Motor, Tower Lamps (if fitted), Hard Meters, Condor Diverter, and GPT Note Acceptor.
12 Volts DC	Isolated output for Coin Validator Fan and Motherboard.
5 Volts DC	Motherboard and Memory Board. Isolated outputs for all switches, buttons, and photo-optics.

1) POWER SUPPLY - HANDLING & SAFETY

The following steps provide a simple method of how to remove and replace an EMAX Power Supply.

Step 1. Open main door.

Step 2. Switch Power Supply off.

Step 3. Remove the Hopper.

Step 4. Undo the four screws around speaker.

Step 5. Move hopper rail forward.

Step 6. Remove three screws on the base of the power supply.

Step 7. Remove 2 M4 nuts and disconnect 12 volt outlet.

Step 8. Disconnect harness from back plain and mains switch.

Step 9. Lift the power supply up with hands then remove the left side out first then the right hand side.

Step 10. The preceding steps must be reversed when replacing a power supply.

1.16.4 HOPPER

The Hopper is located on the bottom of the cabinet at the front left hand side using a slide rail mechanism. Its main purpose is to handle coin out functions:

1) HOPPER - HANDLING & SAFETY

The ensuing steps provide an easy method on how to remove and replace an EMAX Hopper.

Step 1. Open Main Door.

Step 2. Switch Power Supply off.

Step 3. Remove Hopper by pulling the unit towards the front of the machine.

Step 4. To replace Hopper the above steps must be reversed.

N.B. Please ensure the Hopper is firmly plugged into the back connector provided, otherwise this will result in 'HOPPER DISCONNECTED' error message.

1.16.5 CONDOR COIN VALIDATOR

The Coin Validator is located on the inside of the main door below the coin entry. Its main purpose is to accept and validate any incoming coins

COIN VALIDATOR - HANDLING & SAFETY
First remove the wiring harness from coin validator connector. The Condor coin Validator can then be removed by gently pulling up on the device to clear the location tags. The device is then swung away from the bracket bottom side first.

1.16.6 NOTE ACCEPTOR

Please refer to the Note Acceptor User Manual contained in appendix.

1.17   SCREEN LAYOUT

```
                                          CREDIT
                                           WON
                                           BET

    4                                              16
   22                                              24
   10                                               2
   14                                               6
    9    ___    ___    ___    ___    ___           13
   21                                              19
    1                                               1
   18                                              20
    8    ___    ___    ___    ___    ___           12
   15                                               7
   11                                               3
   23                                              25
    5                                              17

              GAME  OVER                  1 CENT GAME
           PLAYING 1 CREDIT PER LINE      $2 = 200 CREDITS
```
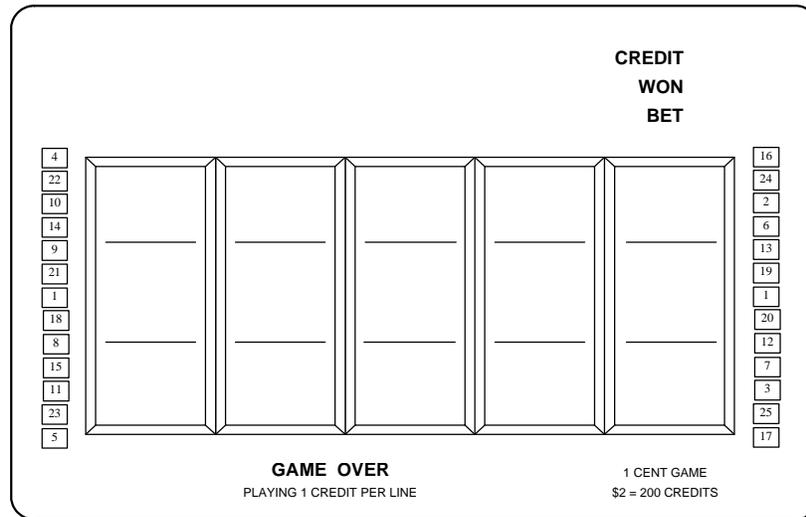
CREDIT METER

Displays the current number of credits available. Credits are added as coins are inserted, after a win, or when the Take Win button is pressed. Credits are deducted at the start of a new game, during a collect, and during a cancel credit procedure.

WON METER

Displays the total credits won on the last game. This meter clears at the start of a new game.

BET METER

Displays the total credits bet on the last game. This display will be updated at the start of a new game.

MESSAGE BANNER

Displays the message GAME OVER, GAMBLE OR CONTINUE, etc.

REEL GRAPHIC DISPLAY

The spinning reels are displayed in this area. Numbers of lines to be played are displayed. Wins are highlighted by each wining line and symbols flashing twice in succession.

CYCLING MESSAGES

Displays the following cycling messages:

CREDITS PER LINE

This displays the number of credits to be bet per line.

HOPPER PAID METER

This displays the number of credits paid out by the hopper after the collect button was selected. This message will be cleared at the start of a new game.

CREDIT PAID METER

This displays the number of credits paid out by a Cancel Credit after being validated. This message will be cleared at the start of a new game.

File: CSK10111 Rev: 1 Date: 04/04/03   Page 27

1.18   REPLACING LAMPS & TUBES

REPLACING TOP FLUORESCENT TUBES

1. Open main door.

2. Turn the machine power switch off.

3. Pull bottom flange of artwork bezel away from machine, raise to clear top box and remove.

4. Raise the bottom of artwork up and away from cabinet approximately 20 mm and remove.

5. Replace any faulty fluorescent tubes or starters.

6. Replace artwork.

7. Replace artwork bezel.

8. Switch on power.

9. Close main door and lock machine.

REPLACING BOTTOM FLUORESCENT TUBES

1. Open the Main Door and switch off power.

2. Open Belly door lock and open Belly Door.

3. Remove artwork from belly area

4. Replace any faulty fluorescent tubes or starters.

5. Replace belly artwork.

6. Switch on power and close Main Door.

REPLACING PLAY BUTTON LAMPS

1. Open the Main Door and switch off power.

2. Extract play button switch and globe holder from play button assembly.

3. Replace faulty globe.

4. Reassemble play button assembly.

5. Switch on power and close Main Door.

1.19 MONTHLY MAINTENANCE

CABINET

- Check door locking mechanism and lock operation.
- Check cables are secured by retaining clips and tie wraps.
- Check fluorescent lamps operating correctly.
- Check general interior cleanliness.

INPORT / OUTPORT TEST

- Test all switches and optics by using the Input Test.
- Test globes and diverter using Outport Test.

HOPPER

- Check hopper is securely mounted in its rails.
- Ensure money is being diverted into the hopper or cashbox correctly - no coins scattered around hopper.

MONITOR

- **Make sure that the machine is fully turned off.**
- Spray the monitor tube with a mild soapy solution, and then wipe the excess with a damp lintless cloth.
- Adjust picture controls if necessary.

NOTE ACCEPTOR

Note: Please refer to the Note Acceptor User manual for instructions.
(Attached at the back of this document).

1.20   TEST MODE MENUS

```
TEST MODE - MAIN MENU

FIRMWARE   ID:
FIRMWARE VER:
G  A  M  E     ID:
G  A  M  E  VER:


                    ┌─────────────────────────────┐
                    │        DIAGNOSTICS          │
                    └─────────────────────────────┘

                    ┌─────────────────────────────┐
                    │       OUT OF SERVICE        │
                    └─────────────────────────────┘

                       ┌──────────────────────┐
                       │         EXIT         │
                       └──────────────────────┘




        POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE
```
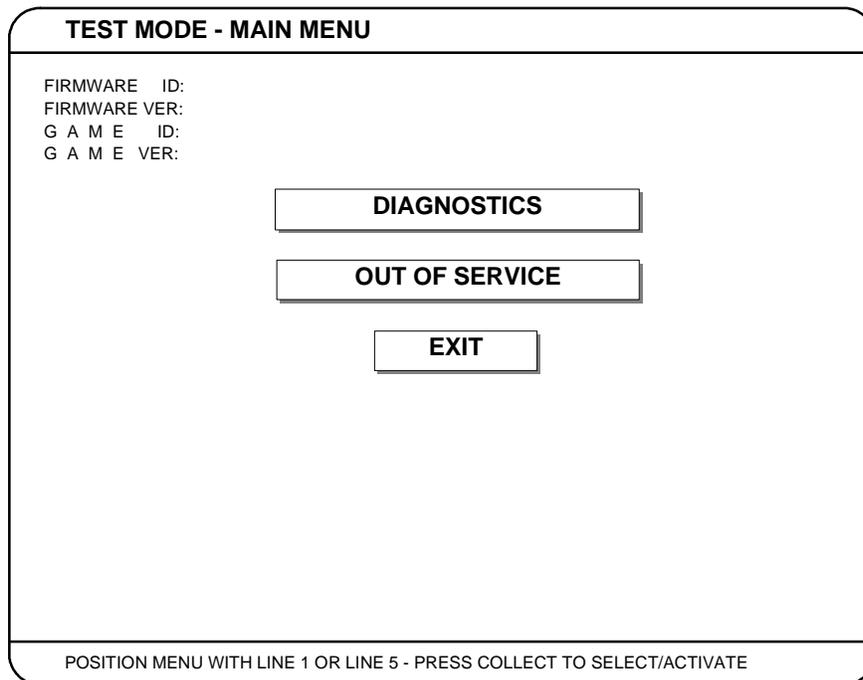
Various test functions can be accessed in the TEST MODE menu.
To enter Test Mode, the Credits must be cleared, the Main Door must be open
and the Reset Key is turned anticlockwise.

1.21   DIAGNOSTICS MENU

TEST MODE - DIAGNOSTICS

HOPPER TEST

INPORT TEST

OUTPORT TEST

REELSTRIP / PAY TEST

EXIT

POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE
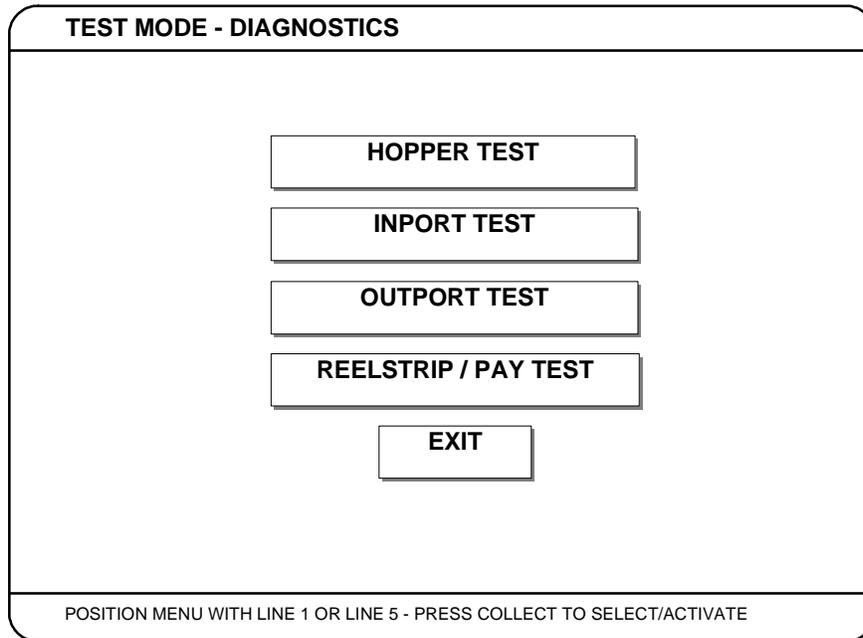
Various diagnostic and test functions can be performed in Test Mode.
Each Test Mode function is described on the following pages.

1.22   HOPPER TEST SUB-MENU

```
┌─────────────────────────────────────────────────────────────┐
│   TEST MODE - HOPPER TEST                                    │
│                                                              │
│                                                              │
│    ┌──────────────────────────┐   * ONLY TEN COINS ARE DISPENSED AT EACH TEST
│    │   START HOPPER TEST      │   * SUBSEQUENT TO MAIN DOOR CLOSURE, A GAME
│    └──────────────────────────┘      CANNOT COMMENCE/CONTINUE UNTIL ALL COINS
│              ┌──────────────┐        DISPENSED, ARE REINSERTED TO THE HOPPER
│              │    EXIT      │
│              └──────────────┘
│                                                              │
│                                                              │
│                                                              │
│   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE
└─────────────────────────────────────────────────────────────┘
```
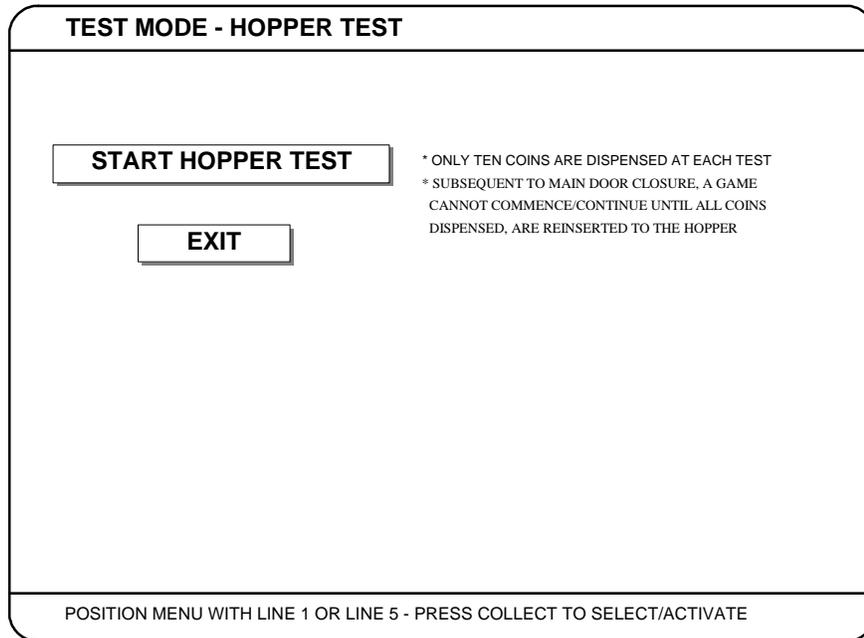
To activate Hopper Test, select the HOPPER TEST button. If there are not enough coins in the hopper, then 'COINS IN HOPPER < 10 COINS OR MAX HOPPER PAYOUT < 10 COINS' appears on the right side of the button as shown on the diagram above.

Follow the screen instructions to perform the 10 coin Hopper Test.
This test verifies that the Hopper is dispensing coins correctly. All coins dispensed must be re-inserted **through the coin entry** once the Main Door has been closed.
NOTE: The main door must be opened to initiate the hopper test.

The machine will not function until the coins have been re-inserted and counted back into the machine.

1.23	INPORT TEST SUB-MENU

```
┌─────────────────────────────────────────────────────────────┐
│  TEST MODE - INPORT TEST                      SCREEN 1 OF 1   │
│                                                               │
│         RESET KEY                                             │
│         AUDIT KEY                                             │
│         POWER SAVE KEY                                        │
│         COLLECT                                               │
│         GAME RULES                                            │
│         1ST BET                                               │
│         2ND BET                                               │
│         3RD BET                                               │
│         4TH BET                                               │
│         5TH BET                                               │
│         TAKE WIN                                              │
│         1ST LINE                                              │
│         2ND LINE                                              │
│         3RD LINE                                              │
│         4TH LINE                                              │
│         5TH LINE                                              │
│         GAMBLE                                                │
│         COIN IN                                               │
│         COIN TO DROP                                          │
│         COIN OUT                                              │
│         YO-YO ALARM                                           │
│         HOPPER FULL                                           │
│         MAIN DOOR                                             │
│         MAIN DOOR OPTIC                                       │
│         LOGIC DOOR                                            │
│         CASHBOX DOOR                                          │
│         BELLY DOOR                                            │
│         STACKER DOOR                                          │
│         HARD METER DOOR                                       │
│                                                               │
│     ┌──────────┐                                             │
│     │  EXIT    │                                             │
│     └──────────┘                                             │
│  ─────────────────────────────────────────────────────────  │
│  ACTIVATED INPUTS SHOULD BE DISPLAYED IN RED                  │
│  PRESS RED WITH BLACK TO EXIT                                 │
└─────────────────────────────────────────────────────────────┘
```

For servicing requirements, switches, buttons and optics can be checked in the INPORT TEST. As a particular input is activated it will be displayed in red if operating correctly. Press RED with BLACK to exit this test.

1.24   OUTPORT TEST SUB-MENU

```
┌─────────────────────────────────────────────────────────────┐
│  TEST MODE - OUTPORT TEST                    SCREEN 1 OF 1    │
│                                                               │
│         COLLECT LAMP                                          │
│         GAME RULES LAMP                                       │
│         1ST BET LAMP                                          │
│         2ND BET LAMP                                          │
│         3RD BET LAMP                                          │
│         4TH BET LAMP                                          │
│         5TH BET LAMP                                          │
│         TAKE WIN LAMP                                         │
│         1ST LINE LAMP                                         │
│         2ND LINE LAMP                                         │
│         3RD LINE LAMP                                         │
│         4TH LINE LAMP                                         │
│         5TH LINE LAMP                                         │
│         GAMBLE LAMP                                           │
│         COIN LOCKOUT                                          │
│         DIVERTER                                              │
│         LOW TOWER LAMP                                        │
│         HIGH TOWER LAMP                                       │
│         HOPPER REVERSE                                        │
│                                                               │
│          WARNING: HOPPER REVERSE TEST MAY DAMAGE TOKENS/COINS │
│          PLEASE EMPTY THE HOPPER BEFORE TEST HOPPER REVERSE   │
│                                                               │
│                                                               │
│      ┌──────────┐   ┌──────────┐                             │
│      │   EXIT   │   │   AUTO   │                             │
│      └──────────┘   └──────────┘                             │
│  ───────────────────────────────────────────────────────    │
│   POSITION CURSOR WITH LINE 9 OR LINE 20 - PRESS LINE 25 TO ACTIVATE │
│   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE │
└─────────────────────────────────────────────────────────────┘
```

The listed lamps, diverter and coin lockout signals can be checked in the OUTPORT TEST. Follow the prompt line instructions to activate each port.

By selecting AUTO, each Outport will be activated in order of the above screen list.

1.25   REEL STRIP / PAY TEST SUB-MENU

```
TEST MODE – REELSTRIP / PAY TEST          SCREEN 1 OF 1

TAKE WIN      - SETS BET
DOUBLE UP     - SETS LINES            WON        BET      BET PER LINE
LINE BUTTONS  - MOVE SYMBOLS DOWN
BET BUTTONS   - MOVE SYMBOLS UP        0          5            1
```

4						16
22						24
10						2
14						6
9						13
21						19
1						1
18						20
8						12
15						7
11						3
23						25
5						17

PRESS COLLECT TO EXIT
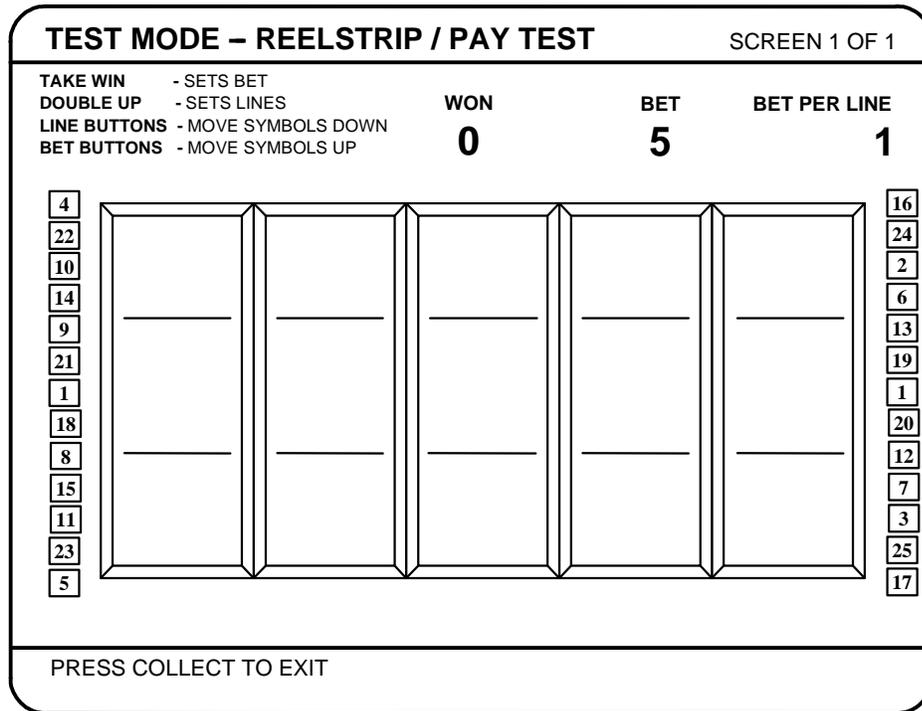
The Symbol Distribution test enables the reel symbol positions in the game firmware to be validated. All symbol combinations and pays can be validated in this test, which includes the pay out for each winning combination.

To move the symbols for each reel use the corresponding Bet Button and Play Button. e.g. for reel three (3) use third Bet Button (Bet 3 Button) to progress through the symbols and third Play Button (Play 5 Button) to go in the opposite direction.

Pressing the Double Up Button increases the number of lines available and pressing the Take Win Button increases the credits per line.

To Exit and return to the Diagnostics Menu turn the Reset Key clockwise.

1.26   OUT OF SERVICE

OUT OF SERVICE

This screen can be selected to place the machine OUT OF SERVICE. To exit this mode turn the Reset Key anticlockwise.

2 AUDIT MODE MENUS

A comprehensive set of audit and test functions are available on the EMAX. They are accessed by activating the Audit Key switch on the right hand side of the machine. When the key is turned anticlockwise the MAIN MENU will appear on the screen.

The audit functions use a system of Menus and Sub-Menus. Access to the Menus, Sub-Menus and various functions is possible by using the Line and Collect Buttons on the Main Door.

To step to the NEXT Menu, press the Line 1 button.

To step to the PREVIOUS Menu, press the Line 5 button.

To select a particular Menu, press the COLLECT Button.

To QUICK ESCAPE from any Menu, turn the Audit Key clockwise.

This will return you to the MAIN MENU or previous menu.

Another activation of the Audit Key from the MAIN MENU will return to the game.

Instructions for the Menus are displayed on the Prompt Line of the screen.

NOTE: The actual button description will vary from game to game but the description on screen will match the description on the button face.

From the MAIN MENU the following Menus can be accessed:

- SOFTWARE METERS
- GAME RECALL
- MACHINE ID & STATUS
- GAME STATISTICS

- HOPPER REFILL
- MACHINE SETUP
- EXIT (RETURN TO GAME)

Once in one of the Menus or Sub-Menus, several commands are available and are displayed on the Command Line of the screen. Typical commands are described below.

NOTE: All the Commands may not be available in a particular Sub Menu.

NEXT	Steps forward to the next item or menu.
PREVIOUS	Steps back to the previous item or menu.
RESET	Initialises values to zero.
EXIT	Exits the particular Sub-Menu and returns to the previous menu.

2.1   MAIN MENU

GAME ID

TITLE BAR

AUDIT MODE - MAIN MENU

FIRMWARE   ID:
FIRMWARE VER:
G A M E   ID:
G A M E VER:

SOFTWARE METERS	HOPPER REFILL
GAME RECALL	MACHINE SETUP
MACHINE ID & STATUS	EXIT
GAME STATISTICS	

SUB MENUS

POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE

PROMT LINES
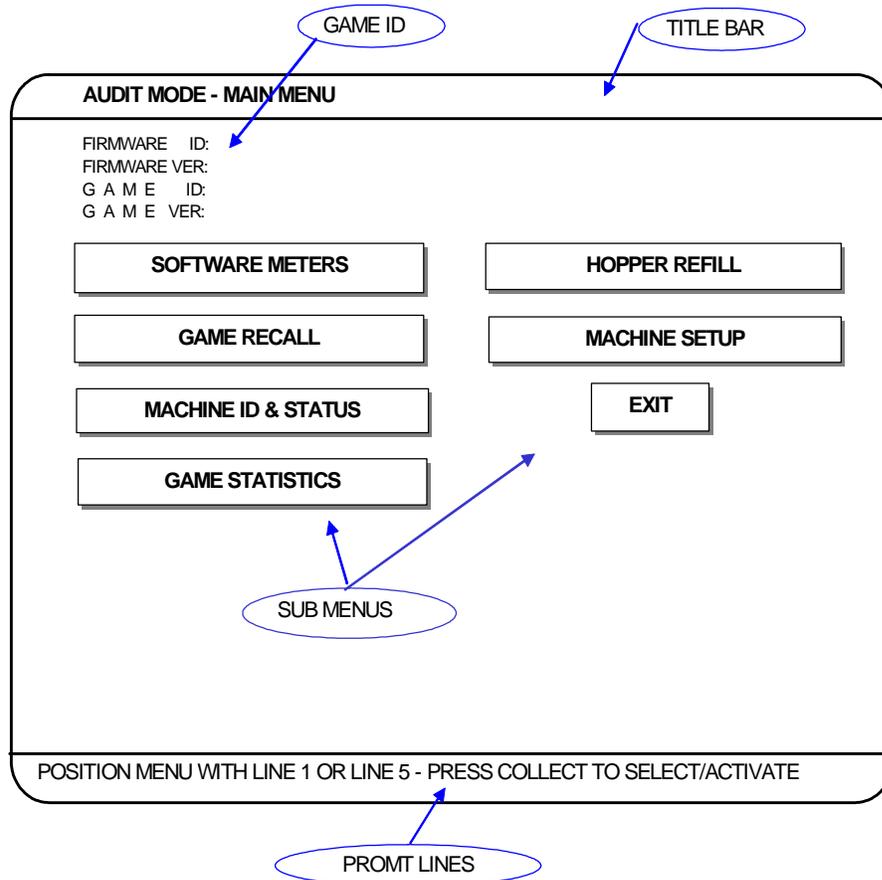
TITLE BAR
  This bar will display the name of the current menu and the page number of the
  particular menu if there is more than one page.

GAME ID
  This area contains the Firmware ID & Version, and Game ID & Version.

SUB MENUS
  The Menus represent the various functions available in AUDIT Mode. Several
  Menus contain Sub-Menus for specific functions.

PROMPT LINE
  Instructions for using the menus are displayed in this area. Most functions are
  selected and activated by using button presses as prompted.   To select a Menu or
  Sub-Menu, follow the instructions on the Prompt Line.

2.2 SOFTWARE METERS

To display the SOFTWARE METERS, insert the Audit Key and turn clockwise. This can be done at all times *except during a game.* Place the cursor onto METERS INFORMATION and press COLLECT.

NOTE: Audit reports may vary between jurisdictions, e.g. Currency type and button layout.
Menu navigation is based on a 25 line button layout within this manual.

SOFTWARE METERS (PAGE 1) – ASP protocol

SOFT METERS	AUDIT MODE	PAGE 1 OF 4

METER UPDATE: YES		**AUDIT METER**	**US METER**
CURRENT CREDITS		(R)	
GAMES PLAYED		(PLAYS)	
GAMES WON		(COUNT)	
TURNOVER		(R)	
WINS EX BONUS (INC JP)		(R)	
BONUS HAND PAID		(R)	
BONUS PAID TO CREDIT METER		(R)	
TRUE COINS IN		(R)	
TRUE COINS OUT		(R)	
BANKNOTES IN		(R)	
EXTRA COIN OUT		(R)	
HAND PAID (EX BONUS HAND PAID)		(R)	
HOPPER REFILL		(R)	
CASHBOX DROP		(R)	
CASHLESS IN		(R)	
CASHLESS OUT		(R)	
US COIN IN	(TURNOVER)	(R)	
US COIN OUT	(WINS EXCEPT JP)	(R)	
US DROP	(CASHBOX + BANKNOTES)	(R)	
US JACKPOT	(WINS HAND PAID)	(R)	
US CANCEL CREDIT		(R)	
BONUS TAX DEDECTABLE		(R)	
BONUS TAX NON-DEDECTABLE		(R)	
BONUS WAGER MATCHED		(R)	
CURRENT CASHABLE		(R)	
CURRENT NON-CASHABLE		(R)	
CURRENT PROMOTIONAL		(R)	

EXIT	NEXT	PREVIOUS

YYYY / MM / DD   HH : MM : SS

POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE

This screen displays all audit related data details since last RAM Clear.

METER UPDATE	Audit meter update enable/disable.
	This can be changed by host and if disabled, then the audit meter will freeze even game play is going on.
CURRENT CREDITS	Current credits shown on the game screen credit meter.
GAMES PLAYED	Total number of games played since machine start up.
GAMES WON	Total number of games won since machine start up.
TURNOVER	Cumulative total amount of all money wagered on the gaming machine.
WINS EX BONUS (INC JP)	Total amount won except external bonus wins. This will include internal free bonus games wins (if any) and jackpot hand paid.
BONUS HAND PAID	Total amount of external bonus wins hand paid
BONUS PAID TO CREDIT	Total amount of external bonus wins transferred to Credit Meter.
TRUE COINS IN	Total amount of tokens/coins inserted.
TRUE COINS OUT	Total amount of tokens/coins paid out by the hopper.
BANKNOTES IN	Total amount of banknotes inserted.
EXTRA COIN OUT	Total number of extra coins paid out by the hopper.
HANDPAID EX BONUS HAND PAID	Total amount hand paid except external bonus wins hand paid.
HOPPER REFILL	Total amount of coins put into the hopper by way of refills.
CASHBOX DROP	Total amount of tokens/coins directed to the coin coin box.
CASHLESS IN	Total amount of cashless in.
CASHLESS OUT	Total amount of cashless out.
US COIN IN	Total turnover.
US COIN OUT	Total amount of wins not hand paid. This will also include external bonus transferred by the host to the credit meter but will not include the external bonus hand paid. This does not include wins hand paid (jackpot).
US DROP	Total money in as coins to cashbox + banknotes.
US JACKPOT	Total amount of wins hand paid.
US CANCEL CREDIT	Total hand paid amount by means of collect.
	This does not include win hand paid (jackpot).
BONUS TAX DEDUCTABLE	Total amount of bonus tax deductable.
BONUS TAX NON-DEDUCTABLE	Total amount of bonus tax non-deductable.
BONUS WAGER MATCHED	Total amount of bonus wager matched.
CURRENT CASHABLE	Current cashable credits on the gaming machine.
CURRENT NON-CASHABLE	Current non-cashable credits except promotional credits on the gaming machine. This can only be transferred from/to host during cashless mode.
CURRENT PROMOTIONAL	Current promotional credits on the gaming machine. Promotional credits are also non-cashable and can only be transferred from/to host during cashless mode.

SOFTWARE METERS (PAGE 1) – SAS protocol

```
┌─────────────────────────────────────────────────────────────────────┐
│   SOFT METERS                  AUDIT MODE                PAGE 1 OF 4  │
├─────────────────────────────────────────────────────────────────────┤
│                            AUDIT REPORT                               │
│                                                                       │
│       CURRENT CREDITS                              (R)                │
│       GAMES PLAYED                                 (PLAYS)            │
│       GAMES WON                                    (COUNT)            │
│       TURNOVER       (COIN IN)                     (R)                │
│       WINS EXCEPT JP (COIN OUT)                    (R)                │
│                                                                       │
│       BONUS TAX DEDECTABLE                         (R)                │
│       BONUS TAX NON-DEDECTABLE                     (R)                │
│       BONUS WAGER MATCHED                          (R)                │
│                                                                       │
│       TRUE COINS IN                                (R)                │
│       TRUE COINS OUT                               (R)                │
│       BANKNOTES IN                                 (R)                │
│       DROP (COINS + BANKNOTES)                     (R)                │
│                                                                       │
│       CANCEL CREDIT EXCEPT JP                      (R)                │
│       JACKPOT HAND PAID                            (R)                │
│                                                                       │
│       CASHABLE IN                                  (R)                │
│       NON-CASHABLE IN                              (R)                │
│       PROMOTIONAL IN                               (R)                │
│       CASHLESS OUT                                 (R)                │
│                                                                       │
│       CURRENT CASHABLE                             (R)                │
│       CURRENT NON-CASHABLE                         (R)                │
│       CURRENT PROMOTIONAL                          (R)                │
│                                                                       │
│   ┌──────────┐   ┌──────────┐   ┌──────────────┐                     │
│   │   EXIT   │   │   NEXT   │   │  PREVIOUS    │                      │
│   └──────────┘   └──────────┘   └──────────────┘                     │
│                                        YYYY / MM / DD   HH : MM : SS  │
│   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE │
└─────────────────────────────────────────────────────────────────────┘
```

CURRENT CREDITS	Current credits shown on the game screen credit meter.
GAMES PLAYED	Total number of games played since RAM Clear.
GAMES WON	Total number of games won since RAM Clear.
TURNOVER (COIN IN)	Cumulative total amount of all money wagered on the gaming machine.
WINS EXCEPT JP (COIN OUT)	Total amount of wins not hand paid. This will include internal free bonus games wins but exclude external bonus transferred from host. This will include wins transferred to credit meter or wins hopper paid or wins cashless transferred out. This does not include wins hand paid (jackpot).
BONUS TAX DEDECTABLE	Total amount of external bonus wins which is tax deductable.
BONUS TAX NON-DEDECTABLE	Total amount of external bonus wins which is tax non-deductable.
BONUS WAGER MATCHED	Total amount of external bonus wager matched.
TRUE COINS IN	Total amount of tokens/coins inserted.
TRUE COINS OUT	Total amount of tokens/coins paid out by the hopper.

BANKNOTES IN	Total amount of banknotes inserted.
DROP (COINS + BANKNOTES)	Total amount of coins into cashbox and banknotes inserted into stacker.
CANCEL CREDIT EXCEPT JP	Total hand paid amount by means of collect. This does not include wins hand paid (jackpot).
JACKPOT HAND PAID	Total amount of wins hand paid.
CASHABLE IN	Total cashable credits transferred from host.
NON-CASHABLE IN	Total non-cashable credits transferred from host.
PROMOTIONAL IN	Total promotional credits transferred from host.
CASHLESS OUT	Total credits transferred out to host.
CURRENT CASHABLE	Current cashable credits on the gaming machine.
CURRENT NON-CASHABLE	Current non-cashable credits except promotional credits on the gaming machine. This can only be transferred from/to host during cashless mode.
CURRENT PROMOTIONAL	Current promotional credits on the gaming machine. Promotional credits are also non-cashable and can only be transferred from/to host during cashless mode.

SOFTWARE METERS (PAGE 2)

```
┌──────────────────────────────────────────────────────────────────────┐
│  AUDIT MODE - SOFT METERS                          SCREEN 2 OF 4        │
├──────────────────────────────────────────────────────────────────────┤
│                         GAME SUMMARY                                   │
│   GAME NAME                                                            │
│   GAME NO                                                              │
│                                                                        │
│   GAME VARIATION                VAR99    VAR01    VAR02    VAR04  VAR06 │
│   THEORETICAL RETURN      (%)                                          │
│   GAMES PLAYED          (PLAYS)                                        │
│   GAMES WON             (COUNT)                                        │
│   TURNOVER                (R)                                          │
│   WINS EXCEPT JP          (R)                                          │
│   JACKPOT HAND PAID       (R)                                          │
│                                                                        │
│   GAMBLE GAMES PLAYED   (PLAYS)                                        │
│   GAMBLE GAMES WON      (COUNT)                                        │
│   GAMBLE TURNOVER         (R)                                          │
│   GAMBLE WINS             (R)                                          │
│                                                                        │
│   RCR STROKE            (PLAYS)                                        │
│   RCR TURNOVER            (R)                                          │
│   RCR WIN                 (R)                                          │
│                   < AUDIT METERS FORMULA >   UNIT:CR                   │
│                              LAST     CURRENT    INTERNAL              │
│        GAMES PLAYED                                                    │
│        TO    (WINS EXCEPT JP)                                          │
│        -TI   (TURNOVER)                                                │
│        +CI   (TRUE COINS IN)                                           │
│        -CI   (TRUE COINS OUT)                                          │
│        +CLI  (CASHLESS IN)                                             │
│        -CLO  (CASHLESS OUT)                                            │
│        +BI   (BANKNOTES IN)                                            │
│        -HP   (HAND PAID INC JP)                                        │
│        +JP   (WINS HAND PAID)                                          │
│        -CR   (CURRENT CREDITS)                                         │
│        ------------------------------------------------------------   │
│        FORMULA RESULT                                                  │
│   ┌─────────┐   ┌─────────┐   ┌──────────┐                            │
│   │  EXIT   │   │  NEXT   │   │ PREVIOUS │                            │
│   └─────────┘   └─────────┘   └──────────┘  YYYY / MM / DD  HH:MM:SS   │
│   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT /      │
│   ACTIVATE                                                             │
└──────────────────────────────────────────────────────────────────────┘
```

This screen displays all game related data details since last RAM Clear.

GAME NAME	Name of the game installed on the machine.
GAME NO	The unique game number used by manufacturer/programmer to identify the game.
GAME VARIATION	The current variation in percentage selected for the game.
THEORETICAL RETURN	The percentage returns to players.
GAMES PLAYED	Total number of games played.
GAMES WON	Total amount of games won.
TURNOVER	Total amount wagered on the machine.
WINS EXCEPT JP	Total amount won except jackpot (wins hand paid).
GAMBLE GAMES PLAYED	Total number of gamble has done.
GAMBLE GAMES WON	Total number of gamble won.
GAMBLE TURNOVER	Total amount wagered by gamble.
GAMBLE WINS	Total amount won by gamble.
RCR STROKE	Residual Credits Removal stroke.

RCR TURNOVER	Residual Credits Removal turnover.
RCR WIN	Residual Credits Removal wins.

Audit Meters Formula used to check audit meters data integrity.

The following formula should result in zero otherwise the audit meters data is not correct and considered as corrupted.

$TO - TI + CI - CO + CLI - CLO + BI - HP + JP - CR = 0$.

If the formula result is not zero, then gamine machine will lock up with Self Audit Error message on the screen. To clear Self Audit Error, RAM Clear should be done.

LAST	The last game's audit meters data for host communication.
CURRENT	The current game's audit meters data for host communication.
INTERNAL	The current game's audit meters data for gaming machine internal memory.

GAMES PLAYED	Total number of games played.
TO	Total credits of wins except jackpot (wins hand paid). This also includes external bonus which is paid to credit meter. This does not include external bonus which is hand paid.
TI	Total credits of turn over.
CI	Total credits of tokens/coins inserted.
CO	Total credits of tokens/coins paid out by hopper.
CLI	Total credits of cashless in.
CLO	Total credits of cashless out.
BI	Total credits of banknotes in.
HP	Total credits of hand paid. This will include hand paid by collect button and wins hand paid (jackpot).
JP	Total credits of wins hand paid.
CR	Current credits.

SOFTWARE METERS (PAGE 3)

```
┌──────────────────────────────────────────────────────────────────────┐
│  AUDIT MODE - SOFT METERS                        SCREEN 3 OF 4         │
│                         MONEY SUMMARY                                  │
│              <TOTAL>                            <HOPPER>               │
│      CASH IN                    (R)      COINS TO HOPPER         (R)   │
│       COINS TO HOPPER           (R)      COINS HOPPER PAID       (R)   │
│       CASHBOX DROP              (R)                                    │
│       BANKNOTES IN              (R)      CURRENT LEVEL       (COINS)   │
│      CASH OUT                   (R)      CURRENT AMOUNT          (R)   │
│       COINS HOPPER PAID         (R)      EXTRA COIN OUT      (COINS)   │
│       CANCEL CREDIT EX JP       (R)      REFILL COUNT       (COUNT)    │
│       JACKPOT HAND PAID         (R)      HOPPER REFILL      (COINS)    │
│                                          MAX HOPPER PAY LIMIT (COINS)  │
│            <COIN ACCEPTOR>                                             │
│      DIVERTER FAULT         (COUNT)      HOPPER RUNAWAY     (COUNT)    │
│      COIN IN YO-YO          (COUNT)      HOPPER EMPTY       (COUNT)    │
│      COIN IN JAM            (COUNT)      HOPPER JAM         (COUNT)    │
│                                          HOPPER FULL        (COUNT)    │
│              <HAND PAY>                                                │
│      HAND PAID INC JP           (R)      HOPPER LEVEL HI LIMIT   (R)   │
│       CANCEL CREDIT EX JP       (R)      HOPPER LOW HI       (COUNT)   │
│       JACKPOT HAND PAID         (R)      HOPPER LEVEL LO LIMIT   (R)   │
│                                          HOPPER LEVEL LO      (COUNT)  │
│              <CASH BOX>                                                │
│      CASHBOX DROP               (R)              <POWER / DOORS>       │
│      CURRENT LEVEL          (COINS)                                    │
│      CURRENT AMOUNT             (R)      POWER UP           (COUNT)    │
│                                          MAIN / BELLY DOOR OPENS (COUNT)│
│          <CASHLESS IN / OUT>             LOGIC SEAL BROKEN   (COUNT)   │
│      CASHLESS IN                (R)      CASH BOX DOOR OPENS (COUNT)   │
│      CASHLESS OUT               (R)      GAMES SINCE POWER UP (COUNT)  │
│                                          GAMES SINCE MAIN DOOR CLOSE   │
│   ┌─────────┐ ┌─────────┐ ┌───────────┐                               │
│   │  EXIT   │ │  NEXT   │ │ PREVIOUS  │                               │
│   └─────────┘ └─────────┘ └───────────┘  YYYY / MM / DD  HH : MM : SS │
│     POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE │
└──────────────────────────────────────────────────────────────────────┘
```

TOTAL	**CASH IN**	Total amount of money inserted as coins and notes.
	COINS TO HOPPER	Total amount of coins inserted into the hopper.
	CASHBOX DROP	Total amount of coins dropped into the cash box.
	BANKNOTES IN	Total amount of banknotes inserted into the stacker
	CASH OUT	Total amount of cash out.
	COINS HOPPER PAID	Total amount of coins dispensed by the hopper.
	CANCEL CREDIT EX JP	Total amount of money paid as the cancel credit.
	JACKPOT HAND PAID	Total amount of money paid as the jackpot wins.
COIN ACCEPTOR	**DIVERTER FAULT**	Total number coin acceptor diverter faults.
		More than five consecutive coins went to the wrong direction (e.g. went to coin box if coins are expected to go into the hopper or vice versa).
	COIN IN YO–YO	Total number of coin in yo-yo errors (e.g. coin went to coin acceptor via opposite sequence) .
	COIN IN JAM	Total number of coin in jam error.
HAND PAY	**HAND PAID INC JP**	Total amount hand paid. This includes jackpot.
	CANCEL CREDIT EX JP	Total amount hand paid by means of collect.
	JACKPOT HAND PAID	Total amount of wins hand paid.
CASH BOX	**CASHBOX DROP**	Total amount of coins directed to the cash box.
	CURRENT LEVEL	The number of coins currently in the cash box.

	CURRENT AMOUNT	The number of coins currently in the cash box.
CASHLESS IN / OUT	**CASHLESS IN**	Total amount of cashless in.
	CASHLESS OUT	Total amount of cashless out.
HOPPER	**COINS TO HOPPER**	The amount of coins put into the hopper. This includes refilled amount to the hopper.
	COINS HOPPER PAID	The amount of coins dispensed by the hopper. This includes hopper paid by collect and credit limit. This will not include extra coin out.
	CURRENT LEVEL	The number of coins currently in the hopper.
	CURRENT AMOUNT	The amount of coins currently in the hopper.
	EXTRA COIN OUT	Total number of extra coins dispensed by hopper.
	REFILL COUNT	The number of times hopper refilled.
	HOPPER REFILL	Total amount of coins hopper refilled.
	MAX HOPPER PAY LIMIT	The maximum hopper pay out amount available.
	HOPPER RUNAWAY	The number of hopper ran away.
	HOPPER EMPTY	The number of hopper was empty.
	HOPPER JAM	The number of hopper jammed.
	HOPPER FULL	The number of hopper was full.
	HOPPER LEVEL HI LIMIT	The hopper level high limit amount set for the warning alarm purpose.
	HOPPER LEVEL HI	The number of occurrence hopper level reached or exceeded the hopper level high limit.
	HOPPER LEVEL LO LIMIT	The hopper level low limit amount set for the warning alarm purpose.
	HOPPER LEVEL LO	The number of occurrence hopper level reached or became below the hopper level low limit.
POWER / DOORS	**POWER UP**	The number of power turned on.
	MAIN / BELLY DOOR OPENS	The number of main door or belly door opened.
	LOGIC SEAL BROKEN	The number of logic seal has broken.
	CASHBOX DOOR OPENS	The number of cash box door opened.
	GAMES SINCE POWER UP	The number of games played since power up.
	GAMES SINCE MAIN DOOR CLOSE	The number of games played since main door closure.

SOFTWARE METERS (PAGE 4)

```
╭─────────────────────────────────────────────────────────────────╮
│  AUDIT MODE - SOFT METERS                    SCREEN 4 OF 4        │
│  ─────────────────────────────────────────────────────────────   │
│                        NOTE ACCEPTOR                             │
│                                                                  │
│            <TOTAL>                        <PERIODIC>             │
│                                                                  │
│   R10    BANKNOTES  (COUNT)      R10     BANKNOTES  (COUNT)      │
│   R20    BANKNOTES  (COUNT)      R20     BANKNOTES  (COUNT)      │
│   R50    BANKNOTES  (COUNT)      R50     BANKNOTES  (COUNT)      │
│   R100   BANKNOTES  (COUNT)      R100    BANKNOTES  (COUNT)      │
│   R200   BANKNOTES  (COUNT)      R200    BANKNOTES  (COUNT)      │
│   ─────────────────────────      ────────────────────────       │
│   TOTAL  BANKNOTES  (COUNT)      TOTAL   BANKNOTES  (COUNT)      │
│                                                                  │
│   TOTAL ACCEPTED       (R)       TOTAL ACCEPTED        (R)       │
│   TOTAL REMOVED        (R)                                       │
│   STACKER DOOR     (COUNT)                                       │
│                                                                  │
│           <FAULTS>                        <HISTORY>             │
│                                                                  │
│   TOTAL REJECT      (COUNT)      THE LAST                        │
│   EXCESSIVE REJECT  (COUNT)      2ND LAST                        │
│   STACKER REMOVED   (COUNT)      3RD LAST                        │
│   STACKER FULL      (COUNT)      4TH LAST                        │
│   BANKNOTE JAM      (COUNT)      5TH LAST                        │
│   DISCONNECTED      (COUNT)                                      │
│                                                                  │
│   ┌──────┐ ┌──────────┐ ┌───────────┐                           │
│   │ EXIT │ │   NEXT   │ │ PREVIOUS  │                           │
│   └──────┘ └──────────┘ └───────────┘  YYYY / MM / DD  HH:MM:SS │
│  ─────────────────────────────────────────────────────────────  │
│  POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT /ACTIVATE │
╰─────────────────────────────────────────────────────────────────╯
```

Above Bill Acceptor screen will not appear in the Audit mode when Bill Acceptor Type was set to 'NONE' in the RAM Clear Set-up screen.
Total meters show all bank notes accepted into the machine since last RAM clear.
Periodic meters show all bank notes accepted into the machine since the last periodic meters reset by the host. Periodic meters reset action can be done by the host only. History shows records of the last 5 notes inserted into the machine.

TOTAL	**R10 BANKNOTES**	Total number of R10 banknotes inserted.
	R20 BANKNOTES	Total number of R20 banknotes inserted.
	R50 BANKNOTES	Total number of R50 banknotes inserted.
	R100 BANKNOTES	Total number of R100 banknotes inserted.
	R200 BANKNOTES	Total number of R200 banknotes inserted.
	TOTAL BANKNOTES	Total number of banknotes inserted.
	TOTAL ACCEPTED	Total amount of banknotes inserted.
	TOTAL REMOVED	Total amount of banknotes removed.
	STACKER DOOR	Total number of times stacker door opened.
FAULTS	**TOTAL REJECT**	Total number of occurrence banknotes rejected.
	STACKER REMOVED	Total number of times stacker removed.
	STACKER FULL	Total number of times stacker full.
	BANKNOTE JAM	Total number of banknote jam errors.
	DISCONNECTED	Total number of note acceptor disconnected.
PERIODIC	**R10 BANKNOTES**	Total number of R10 banknotes inserted since the current period.
	R20 BANKNOTES	Total number of R20 banknotes inserted since the current period.
	R50 BANKNOTES	Total number of R50 banknotes inserted since the current period.
	R100 BANKNOTES	Total number of R100 banknotes inserted since the current period.
	R200 BANKNOTES	Total number of R200 banknotes inserted since the current period.
	TOTAL BANKNOTES	Total number of banknotes inserted.
	TOTAL ACCEPTED	Total amount inserted since current periodic.
HISTORY	**THE LAST**	Time stamp and the amount of the last banknote.
	2ND LAST	Time stamp and the amount of the 2nd last banknote.
	3RD LAST	Time stamp and the amount of the 3rd last banknote.
	4TH LAST	Time stamp and the amount of the 4th last banknote.
	5TH LAST	Time stamp and the amount of the 5th last banknote.

2.3 GAME RECALL

AUDIT MODE - GAME RECALL

BET(CR):	START(CR):	END(CR):	WON(CR):
T.O,:	CASHBOX:	C.CR:	COIN I/O:
WON:	BANKNOTE:	JP:	MONEY I/O:
			CASHLESS I/O:

Left column: 4, 22, 10, 14, 9, 21, 1, 18, 8, 15, 11, 23, 5

Right column: 16, 24, 2, 6, 13, 19, 1, 20, 12, 7, 3, 25, 17

EXIT   NEXT   PREVIOUS

CURRENT GAME

POSITION MENU WITH LINE 1 OR LINE 5 – PRESS COLLECT TO SELECT/ACTIVATE
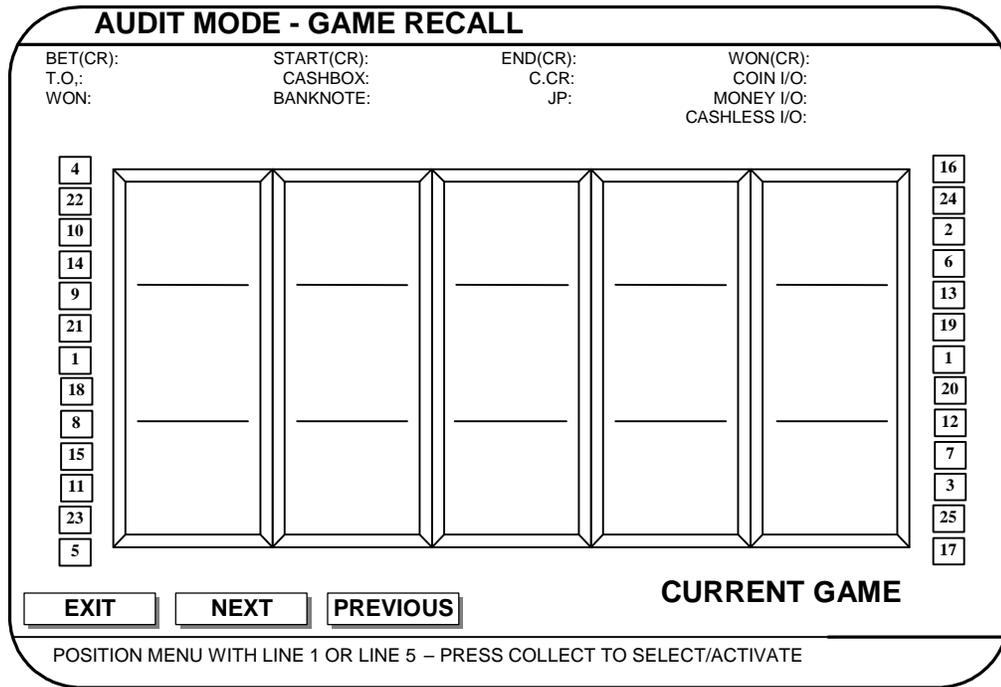
The result of the last twenty games is available in GAME RECALL mode. All information pertaining to the game is displayed.

NEXT steps to the double up screen and then the Last Game screen.

Double Up screen will be displayed after each game screen (see next Page).

BET (CR)	Credit bet (Credit per line x Play line)
START (CR)	Credit after bet
END (CR)	Credit available after play
WON (CR)	Credit won from play
T.O	Total turnover in currency
CASHBOX	Total amount of coins into the coin box
C.CR	Total amount of cancel credit
COIN I/O	Total amount of coin input/output
WON	Total amount of won
BANKNOTE	Total amount of banknotes into the stacker
JP	Total amount of jackpot (wins hand paid)
MONEY I/O	Total amount of money input/output
CASHLESS I/O	Total amount of cashless input/output

GAME RECALL (DOUBLE UP)

```
AUDIT MODE - GAME RECALL

BET(CR):          START(CR):         END(CR):            WON(CR):
T.O,:             CASHBOX:           C.CR:               COIN I/O:
WON:              BANKNOTE:          JP:                 MONEY I/O:
                                                         CASHLESS I/O:

                      YOUR CARD    ACTUAL CARD   WON        CREDIT

    BEFORE DOUBLE UP                             5          20
    AFTER 1ST DOUBLE UP    RED        BLACK       0          20
    AFTER 2ND DOUBLE UP   _____  _____  _____  _____
    AFTER 3RD DOUBLE UP   _____  _____  _____  _____
    AFTER 4TH DOUBLE UP   _____  _____  _____  _____
    AFTER 5TH DOUBLE UP   _____  _____  _____  _____



                                           CURRENT GAME
   [ EXIT ]   [ NEXT ]   [PREVIOUS]

   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE
```

In the above screen, the credit was 20 and credit won was 5 BEFORE DOUBLE
UP. The credit won was not added to old credit and if double up win, then the credit
won will be added. AFTER 1ST DOUBLE UP, credit 5 is lost and old credit 20 is not
changed.

NEXT steps to the LAST GAME stored.
If the Last Game is a Bonus Game, then Bonus Game screen will be displayed (see
next Page).

GAME RECALL (BONUS GAME)

```
AUDIT MODE - GAME RECALL

BET(CR):            START(CR):         END(CR):          WON(CR):
T.O,:               CASHBOX:           C.CR:             COIN I/O:
WON:                BANKNOTE:          JP:               MONEY I/O:
                                                         CASHLESS I/O:
```

4	16
22	24
10	2
14	6
9	13
21	19
1	1
18	20
8	12
15	7
11	3
23	25
5	17

CURRENT GAME
FREE GAME

| EXIT | NEXT | PREVIOUS |

POSITION MENU WITH LINE 1 OR LINE 5 – PRESS COLLECT TO SELECT/ACTIVATE

Bonus game can be identified by additional information displayed on the right bottom of the screen.

2.4   MACHINE ID & STATUS

MACHINE ID – ASP protocol

```
┌─────────────────────────────────────────────────────────────────┐
│ AUDIT MODE - MACHINE ID & STATUS                  SCREEN 1 OF 3   │
│                                                                   │
│                          MACHINE ID                               │
│        MACHINE SERIAL NUMBER                        1             │
│        MANUFACTURER ID                              6             │
│        MANUFACTURER NAME                  UNIVERSAL S.A.          │
│        FIRMWARE ID           BOOT ROM  :      EBRXX020            │
│                              GAME ROMS:       ON4YE034            │
│        FIRMWARE VERSION                          03.4             │
│        GAME NAME                        OCEAN COMMOTION 2         │
│        GAME NUMBER                              162               │
│        MAXIMUM BET           (CR)               1000             │
│        THEORETICAL RETURN     (%)              88.09             │
│        MAXIMUM POSSIBLE WIN   (CR)             304320            │
│        ASP VERSION                             5000H             │
│        SECURITY LEVEL        (0..3)           0 (0 = HIGHEST)    │
│                                                                   │
│       ┌────────┐  ┌────────┐  ┌──────────┐                        │
│       │  EXIT  │  │  NEXT  │  │ PREVIOUS │                        │
│       └────────┘  └────────┘  └──────────┘                        │
│                                    YYYY / MM / DD   HH : MM : SS   │
├───────────────────────────────────────────────────────────────────┤
│   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE │
└───────────────────────────────────────────────────────────────────┘
```

MACHINE SERIAL NUMBER	Machine serial number set by RAM Clear Setup screen.
MANUFACTURER ID	Manufacturer identification number assigned by the ASP protocol document.
MANUFACTURER NAME	Manufacturer's name.
FIRMWARE ID	Firmware identification number of both the Boot EPROM and game EPROMs.
FIRMWARE VERSION	Firmware version number.
GAME NAME	Game name.
GAME NUMBER	Unique game number.
MAXIMUM BET	Maximum bet.
THEORETICAL RETURN	Theoretical percentage return to the player for the game.
MAXIMUM POSSIBLE WIN (CR)	Maximum possible win in credits by the max bet.
ASP VERSION	ASP protocol version number.
SECURITY LEVEL	Security Level (0..3).

MACHINE ID – SAS protocol

```
AUDIT MODE - MACHINE ID & STATUS                    PAGE 1 OF 3

                          MACHINE ID

        MACHINE SERIAL NUMBER                             1

        MANUFACTURER ID                                  PA

        MANUFACTURER NAME                      UNIVERSAL S.A.

        FIRMWARE ID                    BOOT ROM  :   EBRXX020
                                       GAME ROMS:    ON4YE034

        FIRMWARE VERSION                               03.4

        GAME NAME                          OCEAN COMMOTION 2

        GAME NUMBER                                     162

        MAXIMUM BET              (CR)                   1000

        THEORETICAL RETURN       (%)                   88.09

        MAXIMUM POSSIBLE WIN     (CR)                  304320

        GAME DENOMINATION CODE                    0x01   (R0.01)

        SAS VERSION                                    5.02

   EXIT        NEXT        PREVIOUS
                                          YYYY / MM / DD   HH : MM : SS
   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE
```

SERIAL NUMBER	The gaming machine serial number set by RAM Clear Set-up screen.
MANUFACTURER ID	The unique code assigned by SAS protocol to identify manufacturer and game.
MANUFACTURER NAME	The manufacturer name.
FIRMWARE ID	Firmware identification number of both the Boot EPROM and the Game EPROMs.
FIRMWARE VERSION	Firmware version number.
GAME NAME	Game Name.
GAME NUMBER	Additional ID to identify game.
MAXIMUM BET	Maximum bet in credits.
THEORETICAL RETURN	Theoretical percentage return to the player for the game.
MAXIMUM POSSIBLE WIN	Maximum possible win in credits by the max bet.
GAME DENOMINATION CODE	Denomination code assigned by SAS protocol document
SAS VERSION	SAS protocol version number.

MACHINE STATUS

```
AUDIT MODE - MACHINE ID & STATUS                    SCREEN 2 OF 3

                          MACHINE STATUS

        COIN ACCEPTOR
        COIN ACCEPTOR CREDIT LIMIT        (R)              (0=DISABLE)

        HOPPER
        MAX HOPPER PAY LIMIT             (R)              (0=HANDPAY)

        NOTE ACCEPTOR
        NOTE ACCEPTOR CREDIT LIMIT       (R)              (0=DISABLE)

        JACKPOT HAND PAY LIMIT           (R)              (0=DISABLE)
        JACKPOT HAND PAID          (COUNT)
        LAST JACKPOT HAND PAID           (R)

        CELEBRATION WIN LIMIT            (R)              (0=DISABLE)
        CELEBRATION WIN            (COUNT)
        LAST LARGE WIN                   (R)

        CREDIT LIMIT                     (R)              (0=DISABLE)
        CREDIT LIMIT EXCEEDED      (COUNT)
        LAST CREDIT LIMIT WIN            (R)

        LARGE WIN LIMIT                  (R)              (0=DISABLE)
        LARGE WIN                  (COUNT)
        LAST LARGE WIN                   (R)


      [ EXIT ]      [ NEXT ]     [ PREVIOUS ]
                                           YYYY / MM /DD   HH : MM : SS

    POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE
```

This screen displays EGM status and win limits related information.

COIN ACCEPTOR	Coin acceptor status.
COIN ACCEPTOR CREDIT LIMIT	Coin acceptor credit limit.
HOPPER	Hopper status.
HOPPER PAY LIMIT	Hopper pay limit.
NOTE ACCEPTOR	Note acceptor status.
NOTE ACCEPTOR CREDIT LIMIT	Note acceptor credit limit.
JACKPOT HAND PAY LIMIT	Jackpot hand pay limit.
JACKPOT HAND PAID	Jackpot hand paid counter.
LAST JACKPOT HAND PAID	Last jackpot hand paid amount.
CELEBRATION WIN LIMIT	Celebration win limit.
CELEBRATION WIN	Celebration win counter.
LAST CELEBRATION WIN	Last celebration win amount.
CREDIT LIMIT	Credit limit.
CREDIT LIMIT EXCEEDED	Credit limit counter.
LAST CREDIT LIMIT WIN	Last win amount which has caused a credit limit.
LARGE WIN LIMIT	Large win limit.
LARGE WIN	Large win counter.
LAST LARGE WIN	Last large win amount.

HOST COMMUNICATION STATUS

```
┌─────────────────────────────────────────────────────────────────┐
│  AUDIT MODE - MACHINE ID & STATUS            SCREEN 3 OF 3        │
│                                                                   │
│                HOST COMMUNICATION STATUS                          │
│                                                                   │
│           TOTAL POLLS                                             │
│           LINK DOWN                                               │
│           NON ACKNOWLEDGE (NAK) FROM HOST                         │
│           CRC ERRORS                                              │
│           OVERRUN ERRORS                                          │
│           COLLISION OCCURRED                                      │
│           CORRUPTED PACKETS                                       │
│           PACKET ERROR RATE              (%)                      │
│           BAD SEQUENCE NUMBER                                     │
│           AUDIT METER POLL          (SECONDS)                     │
│           APPLICATION LAYER                                       │
│           DATA LINK LAYER                                         │
│                                                                   │
│                                                                   │
│   ┌────────┐  ┌────────┐  ┌──────────┐  ┌────────┐               │
│   │  EXIT  │  │  NEXT  │  │ PREVIOUS │  │  RESET │               │
│   └────────┘  └────────┘  └──────────┘  └────────┘               │
│                                 YYYY / MM / DD   HH : MM : SS     │
│   POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE │
└─────────────────────────────────────────────────────────────────┘
```

TOTAL POLLS	The number of total polls.
LINK DOWN	The number of link down.
NON ACKNOWLEDGE (NAK) FROM HOST	The number of NAK from host.
CRC ERRORS	The number of CRC errors.
COLLISION OCCURRED	The number of collision occurred.
CORRUPTED PACKETS	The number of corrupted packets.
PACKET ERROR RATE	Packet error rate (%)
BAD SEQUENCE NUMBER	The number of bad sequence number occurred.
AUDIT METER POLL	Audit meter poll (seconds)
APPLICATION LAYER	Application Layer Tx / Rx status
DATA LINK LAYER	Data Link Layer Tx / Rx status

2.5 GAME STATISTICS

```
AUDIT MODE - GAME STATISTICS


GAME:
CREDITS WON           %
GAMES WON             %
      - TYPE -            - COUNT -       - TYPE -            - COUNT -
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0
      Game Dependent          0           Game Dependent          0

   EXIT


PRESS COLLECT TO EXIT
```

This screen displays the occurrence of all winning combinations for the game. The symbol names shown above are only to illustrate. The symbol names will differ from game to game as they are game dependant. Up top it displays both the percentage of credits won and the percentage of games won.

2.6   HOPPER REFILL

```
AUDIT MODE - HOPPER REFILL




              ┌──────────────────────┐
              │    HOPPER REFILL     │    PRESS RED WITH BLACK
              └──────────────────────┘    TO ADD 500 COINS TO HOPPER

              ┌──────────────────────┐
              │  HOPPER LEVEL ADJUST │    CURRENT HOPPER LEVEL (COINS): 0
              └──────────────────────┘

                   ┌──────────┐
                   │   EXIT   │
                   └──────────┘




─────────────────────────────────────────────────────────────────
       POSITION MENU WITH LINE 1 OR LINE 5 – PRESS COLLECT TO SELECT / ACTIVATE
```

This screen is used to refill the Hopper with the number of coins as set after the last RAM CLEAR.
Select Hopper Refill button, the message 'PRESS RED WITH BLACK TO ADD 500 COINS TO HOPPER and CURRENT HOPPER LEVEL: 0 COINS ' will be displayed on the screen as shown above (500 may vary depending on the refill amount which has configured from the RAM Clear Setup screen).
Follow the prompt line instructions and after successfully completing the refill procedure the message 'HOPPER REFILL FINISHED - 500 COINS ADDED TO HOPPER' will appear on the screen and current hopper level will be incremented by the refilled number of coins.

Hopper level adjust button can be used to adjust the hopper level by a key input and this can help to synchronize software hopper level and actual hardware hopper level.

2.7	**MACHINE SETUP**

2.7.1 MACHINE SETUP

```
┌─────────────────────────────────────────────────┐
│  AUDIT MODE - MACHINE SETUP                      │
│                                                  │
│                                                  │
│              ┌──────────────────────┐            │
│              │     CONFIGURE        │            │
│              └──────────────────────┘            │
│              ┌──────────────────────┐            │
│              │   SOUND SYSTEM       │            │
│              └──────────────────────┘            │
│              ┌──────────────────────┐            │
│              │   TOWER LAMPS        │            │
│              └──────────────────────┘            │
│              ┌──────────────────────┐            │
│              │   TOUCH SCREEN       │            │
│              └──────────────────────┘            │
│                 ┌──────────────┐                 │
│                 │    EXIT      │                 │
│                 └──────────────┘                 │
│                                                  │
│                                                  │
├──────────────────────────────────────────────────┤
│ POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT/ACTIVATE │
└──────────────────────────────────────────────────┘
```
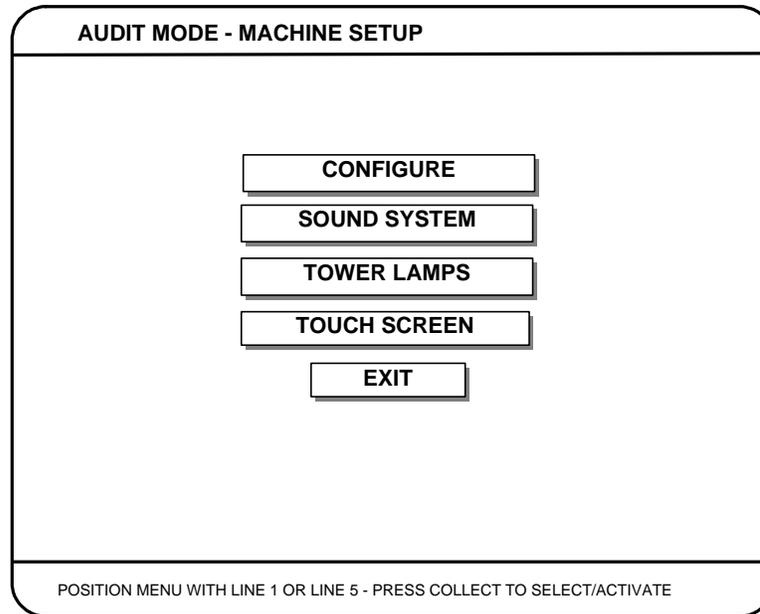
CONFIGURE	System configuration options.
SOUND SYSTEM	Sound system setup.
TOWER LAMPS	Tower lamps setup.
TOUCH SCREEN	Touch screen calibration

2.7.2 CONFIGURE

```
AUDIT MODE – CONFIGURE                                    SCREEN 1 OF 1

                        RAM CLEAR SETUP DATA

          MACHINE SERIAL NUMBER (GMID)                    1
          HOST COMMUNICATION ADDRESS  (1 - 127)           N.A.
          TOKEN/COIN DENOMINATION      (CENTS)            100   (NONE = CASHLESS ONLY)
          BASE CREDIT VALUE            (CENTS)             1
          VARIATION                                       99   (88.09%)
          BET BUTTON CONFIGURATION                        1, 2, 5, 10, 40
          CASHLESS TRANSFER FROM HOST                     YES
          GAMBLE ENABLE                                   YES
          DATE (YYYY / MM / DD)                           2003 / 05 / 31
          TIME  (HH : MM : SS)                            12 : 30 : 00
          COIN VALIDATOR TYPE                             CONDOR PLUS CP133
          HOPPER TYPE                                     GM
     *    CANCEL CREIT LEVEL          (COINS)            100   (0 = HAND PAY)
          HOPPER REFILL AMOUNT        (COINS)            500
          HOPPER LEVEL LOW LIMIT      (COINS)              0   (0 = DISABLE)
          BONUS / MULTIPLIER WIN FROM HOST                YES
          ALLOW PLAYER TO CANCEL HAND PAY                 NO
          RESET JACKPOT TO CREDIT BY HOST                 N.A.
          MAX RESET JACKPOT TO CREDIT       (R)           N.A.  (0 = DISABLE)
          PROTOCOL                                        ASP5000H
          SECURITY LEVEL                                  HIGHEST
     *    JACKPOT HAND PAY LIMIT            (R)           0.00  (0 = DISABLE)
     *    CELEBRATION WIN LIMIT            (R)            0.00  (0 = DISABLE)
          NOTE ACCEPTOR                                   GPT V2.2
          R10   BANKNOTES ACCEPTED                        YES
          R20   BANKNOTES ACCEPTED                        YES
          R50   BANKNOTES ACCEPTED                        YES
          R100  BANKNOTES ACCEPTED                        YES
          R200  BANKNOTES ACCEPTED

          THE MAIN DOOR MUST BE OPEN TO PERFORM A RAM RESET.
     *    THE MAIN DOOR AND LOGIC DOOR MUST BE OPEN TO MODIFY.
          REQUIRES THE LOGIC DOOR OPEN TO MODIFY AT ALL TIMES.

   POSITION CURSOR WITH LINE 9 OR LINE 20 – PRESS LINE 25 TO CHANGE
   PRESS LINE 1 AND COLLECT TO RESET RAM AND EXIT
```

MACHINE SERIAL NUMBER (GMID)	Machine serial number.
HOST COMMUNICATION ADDRESS	Host communication address (not applicable in ASP protocol and apply to SAS protocol).
TOKEN / COIN DENOMINATION (CENTS)	Token / Coin denomination in cents.
BASE CREDIT VALUE (CENTS)	Base credit value in cents.
VARIATION	Current game variation.
BET BUTTON CONFIGURATION	Bet button configuration.
CASHLESS TRANSFER FROM HOST	Cashless Transfer from host (yes/no).
GAMBLE ENABLE	Gamble Enable (yes/no).
DATE (YYYY / MM / DD)	Date setting.
TIME (HH : MM : SS)	Time setting.
COIN VALIDATOR TYPE	Coin validator type.
HOPPER TYPE	Hopper type.
CANCEL CREDIT LEVEL (COINS)	Cancel credit trigger level in coins.
HOPPER REFILL AMOUNT (COINS)	Hopper refill amount in coins
HOPPER LEVEL LOW LIMIT (COINS)	Hopper level low limit which is set by the host in ASP protocol but may set manually in SAS protocol
BONUS / MULTIPLIER WIN FROM HOST	Bonus / Multiplier win from host (yes/no).

ALLOW PLAYER TO CANCEL HAND PAY	Allow player to cancel hand pay (yes/no).
RESET JACKPOT TO CREDIT BY HOST	Reset jackpot amount to credit meter instead of hand pay (used in SAS protocol only).
MAX RESET JACKPOT TO CREDIT	Maximum jackpot amount which can be reset to credit meter (used in SAS protocol only).
PROTOCOL	Protocol type.
SECURITY LEVEL	Security level (Lowest / Low / High / Highest)
JACKPOT HAND PAY LIMIT	Jackpot hand pay limit.
CELEBRATION WIN LIMIT	Celebration win limit.
NOTE ACCEPTOR TYPE	Note acceptor type.
R10 BANKNOTES ACCEPTED	R10 banknotes accepted (yes/no).
R20 BANKNOTES ACCEPTED	R20 banknotes accepted (yes/no).
R50 BANKNOTES ACCEPTED	R50 banknotes accepted (yes/no).
R100 BANKNOTES ACCEPTED	R100 banknotes accepted (yes/no).
R200 BANKNOTES ACCEPTED	R200 banknotes accepted (yes/no).

2.7.3   SOUND SYSTEM

```
AUDIT MODE - SOUND SYSTEM                    SCREEN 1 OF 1

                    VOLUME LEVEL
        MIN                              MAX
        [████████░░░░░░░░░░░░░░░░]

        TO DECREASE VOLUME:  PRESS LINE 1
        TO INCREASE VOLUME:    PRESS LINE 25
        ALARM SOUND WILL NOT BE MUTED

                    PLAY SOUND
                        1
        NEXT SOUND        : PRESS TAKE WIN
        PREVIOUS SOUND : PRESS  GAMBLE


        EXIT

    PRESS COLLECT TO EXIT
```
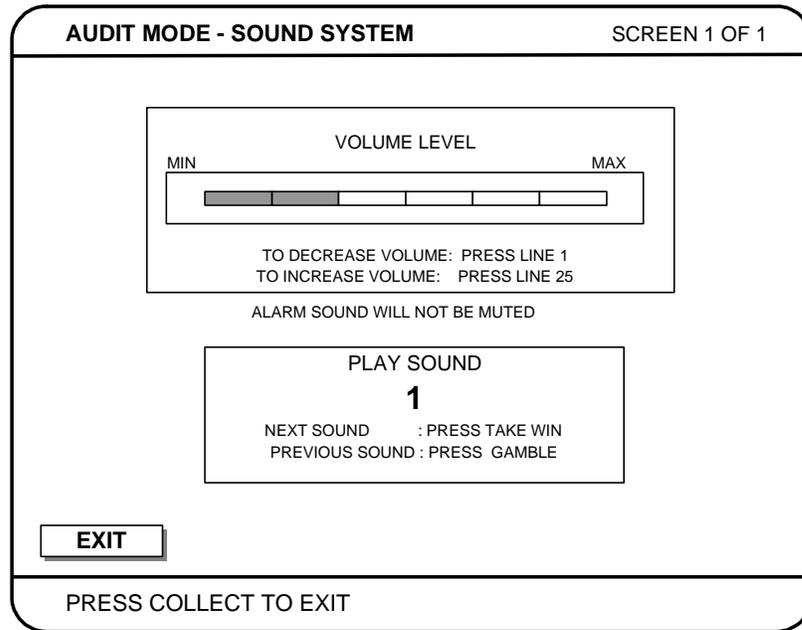
Volume can be adjusted by following the prompts on the screen.
The sound test will activate all sounds in the game. Follow the prompts on
screen.

VOLUME LEVEL	Press LINE 1 or LINE 25 to increase or decrease sound volume level. Sound volume level (from 0 to 7) will be displayed.
	Level 0 will mute the game sound but the alarm sound will not be muted.
PLAY SOUND	Select and play sound using TAKE WIN or GAMBLE. Press TAKE WIN or GAMBLE again to stop the selected sound (and listen to the next sound).

2.7.4 TOWER LAMPS

```
┌─────────────────────────────────────────────────────────────────────────┐
│  TOWER LAMPS                  AUDIT MODE              PAGE 1 OF 1          │
├─────────────────────────────────────────────────────────────────────────┤
│        FLASH RATE (SECONDS)                    0.5                        │
│        MOPEN                                   BOTTOM FLASH               │
│        MCLOSE OR RESET TILT/JP AFTER MCLOSE    BOTTOM ON                  │
│        TILT                                    TOP FLASH                  │
│        TILT AFTER MCLOSE                       TOP FLASH / BOTTOM OFF      │
│        RESET TILT (NOT AFTER MCLOSE)           BOTH OFF                   │
│        MOPEN WITH TILT                         FLASH BOTH SYNCHRONOUSLY   │
│        MCLOSE WITH TILT                        FLASH BOTH SYNCHRONOUSLY   │
│        JACKPOT                                 FLASH BOTH ALTERNATELY     │
│        JACKPOT AFTER MCLOSE                     FLASH BOTH ALTERNATELY    │
│        RESET JACKPOT (NOT AFTER MCLOSE)        BOTH OFF                   │
│        MOPEN IWITH JACKPOT                     TOP FLASH / BOTTOM ON      │
│        MCLOSE WITH JACKPOT                     TOP FLASH / BOTTOM ON      │
│        TILT IWITH JACKPOT                      FLASH BOTH SYNCHRONOUSLY   │
│        MOPEN WITH TILT AND JACKPOT             BOTH ON                    │
│        MCLOSE WITH TILT AND JACKPOT            BOTH ON                    │
│        NEXT PLAY OR NEXT PLAY TIMEOUT          BOTTOM OFF                 │
│        NEXT PLAY TIMER (MINUTES)               2 (0=DISABLE)              │
│                                                                          │
│          TILT     : ERROR EXCEPT MAIN DOOR OPEN                          │
│          MOPEN    : MAIN DOOR OPEN                                        │
│          MCLOSE   : MAIN DOOR CLOSE                                       │
│          JACKPOT  : HAND PAY / CELEBRATION WIN LOCK UP                    │
│          NEXT PLAY : NEXT PLAY AFTER MAIN DOOR CLOSE                      │
│          NEXT PLAY TIMER : WAIT NEXT PLAY AFTER MAIN DOOR CLOSE           │
│                                                                          │
│      ┌──────────┐    ┌──────────────┐                                    │
│      │  EXIT    │    │  DEFAULT     │                                    │
│      └──────────┘    └──────────────┘                                    │
├─────────────────────────────────────────────────────────────────────────┤
│    MOVE CURSOR WITH LINE 9 OR LINE 20 - PRESS LINE 25 TO CHANGE           │
│    POSITION MENU WITH LINE 1 OR LINE 5 - PRESS COLLECT TO SELECT / ACTIVATE│
└─────────────────────────────────────────────────────────────────────────┘
```

Tower lamps operation is set to default values after RAM Clear Set-up. This setting can be changed by this screen. Pressing DEFAULT button also set tower lamp operation to factory default setting values.

FLASH RATE	Tower lamp flash rate in seconds
MOPEN	Main door open.
MCLOSE OR RESET TILT/JP AFTER MCLOSE	Main door close or reset tilt/jackpot after main door closure.
TILT	Error condition except main door open.
TILT AFTER MCLOSE	Tilt condition after main door closure.
RESET TILT (NOT AFTER MCLOSE)	Reset tilt condition not after main door closure.
MOPEN WITH TILT	Main door open during tilt condition.
MCLOSE WITH TILT	Main door close during tilt condition.
JACKPOT	Hand pay / celebration win lockup.
JACKPOT AFTER MCLOSE	Hand pay / celebration win lockup occurred after main door closure.
RESET JACKPOT (NOT AFTER MCLOSE)	Reset hand pay / celebration win lockup not after main door closure.
MOPEN WITH JACKPOT	Main door opened during hand pay / celebration win lockup.
MCLOSE WITH JACKPOT	Main door closed during hand pay / celebration win

	lockup.
TILT WITH JACKPOT	Tilt condition occurred during hand pay / celebration win lockup.
MOPEN WITH TILT AND JACKPOT	Main door opened during tilt condition and hand pay / celebration win lockup.
MCLOSE WITH TILT AND JACKPOT	Main door closed during tilt condition and hand pay / celebration win lockup.
NEXT PLAY OR NEXT PLAY TIMEOUT	Next play or Next Play Timeout will trigger this tower lamp operation. Normally turn off the tower lamp which is turned on or flashed by main door close.
NEXT PLAY TIMER (MINUTES)	Next Play Timer expiry will trigger this tower lamp operation. Normally turn off the tower lamp which is turned on of flashed by main door close.

2.7.5 TOUCH SCREEN

```
┌─────────────────────────────────────────────────┐
│  AUDIT MODE – TOUCH SCREEN                        │
│  ┌─────────────────────────────────────────────┐ │
│  │   +                                          │ │
│  │                                              │ │
│  │        ┌──────────────────────────────┐      │ │
│  │        │        INSTRUCTIONS           │      │ │
│  │        │                               │      │ │
│  │        │ TO CALIBRATE TOUCH SCREEN     │      │ │
│  │        │ PRESS EACH TOUCH POINT        │      │ │
│  │        │ (INDICATED BY A CROSS) AS IT  │      │ │
│  │        │ APPEARS ON THE SCREEN         │      │ │
│  │        └──────────────────────────────┘      │ │
│  │                                              │ │
│  │   ┌────────┐                                 │ │
│  │   │ EXIT   │                                 │ │
│  │   └────────┘                                 │ │
│  └─────────────────────────────────────────────┘ │
│  PRESS COLLECT TO EXIT                            │
└─────────────────────────────────────────────────┘
```
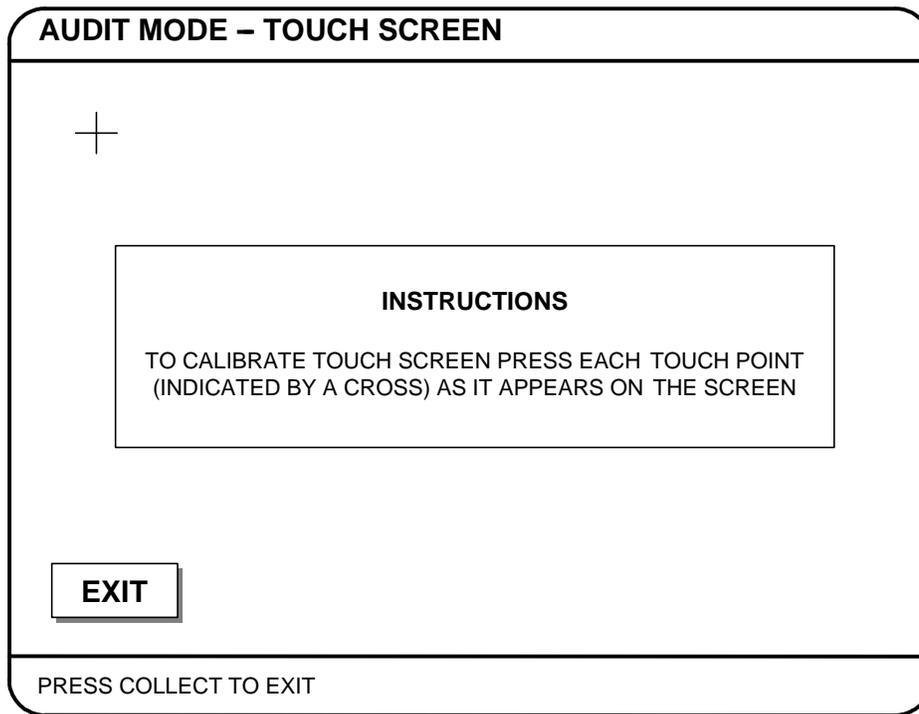
This screen is to calibrate the touch screen.

3 ATTENDANT PROCEDURES

3.1 HOPPER REFILL

A Hopper Refill can only be performed after the Hopper is emptied during a collect sequence. In this case the message 'CALL ATTENDANT - COIN OUT ERROR - HOPPER EMPTY / JAM' will be displayed.

```
                                                         CREDIT
                                                          WON
                                                          BET

  ┌4 ┐                  CALL ATTENDANT                    ┌10┐
  ┌12┐        COIN OUT ERROR - HOPPER EMPTY / JAM         ┌2 ┐
  ┌6 ┐                                                    ┌16┐
  ┌8 ┐          <HOW TO CLEAR HOPPER JAM>                 ┌19┐
  ┌14┐        1) OPEN MAIN DOOR                           ┌20┐
             2) CLEAR JAMMED COINS IN THE HOPPER
  ┌1 ┐       3) CLOSE MAIN DOOR AND TURN THE RESET KEY    ┌15┐
  ┌9 ┐                                                    ┌18┐
                 <HOW TO REFILL HOPPER>
  ┌7 ┐        1) OPEN MAIN DOOR                           ┌17┐
             2) REFILL HOPPER WITH 500 COINS
  ┌13┐       3) CLOSE MAIN DOOR                           ┌3 ┐
             4) IF HOPPER IS EMPTY, PRESS BET 1
  ┌5 ┐          TO RESET CURRENT HOPPER LEVEL             ┌11┐
             5) PRESS RED WITH BLACK TO RECORD REFILL
             6) TURN THE RESET KEY

                CURRENT HOPPER LEVEL:  0  COINS
```

The following is a refill procedure:

Step 1. Open the main door and verify the hopper is empty.

Step 2. Insert number of coins as displayed on the screen hopper (500 coins in this example) into the hopper and then close the main door.

Step 3. Press RED & BLACK simultaneously to record the refill. "XXX COINS ADDED TO HOPPER" will appear on the display and "CURRENT HOPPER LEVEL: XXX COINS" will also increment.

Step 4. Clear the error message with the Reset Key.

A refill can also be recorded in Audit mode.

3.2   HOPPER JAM CLEAR

CREDIT
WON
BET

4		10
12		2
6		16
8		19
14		20
1		15
9		18
7		17
13		3
5		11

CALL ATTENDANT
COIN OUT ERROR - HOPPER JAM / EMPTY

<HOW TO CLEAR HOPPER JAM>
1) OPEN MAIN DOOR
2) CLEAR JAMMED COINS IN THE HOPPER
3) CLOSE MAIN DOOR AND TURN THE RESET KEY

<HOW TO REFILL HOPPER>
1) OPEN MAIN DOOR
2) REFILL HOPPER WITH 500 COINS
3) CLOSE MAIN DOOR
4) IF HOPPER IS EMPTY, PRESS BET 1
   TO RESET CURRENT HOPPER LEVEL
5) PRESS RED WITH BLACK TO RECORD REFILL
6) TURN THE RESET KEY

CURRENT HOPPER LEVEL: 0 COINS

If, during a hopper payout, coins are not detected exiting the hopper, message CALL ATTENDANT - COIN OUT ERROR - HOPPER JAM / EMPTY message is displayed.

1) Open the door and check the hopper for a jammed coin.

2) Clear the jammed coin, then close the door.

3) Clear the error message with the Reset Key.

3.3	**CANCEL CREDIT**

If a player chooses to collect credits less than the cancel credit level as set in the ram clear setup configuration, the hopper will pay coins out. Any credits less than the token / coin denomination (residual credits) will remain on the credit meter after hopper pay out and requires hand pay. Also any credits greater than or equal to the cancel credit level requires hand pay (cancel credits). If the player press collect button, then the player is given the option to get hand pay by pressing take win button or cancel hand pay by pressing the collect button again.

```
                                                    CREDIT
                                                     WON
                                                     BET

  4                                                          16
  22                                                         24
  10                                                          2
  14                                                          6
   9                                                         13
  21                     < HAND PAY >                        19
   1          PRESS TAKE WIN TO GET HAND PAID                 1
  18          OR PRESS COLLECT TO CANCEL HAND PAY            20
   8                                                         12
  15                                                          7
  11                                                          3
  23                                                         25
   5                                                         17
```
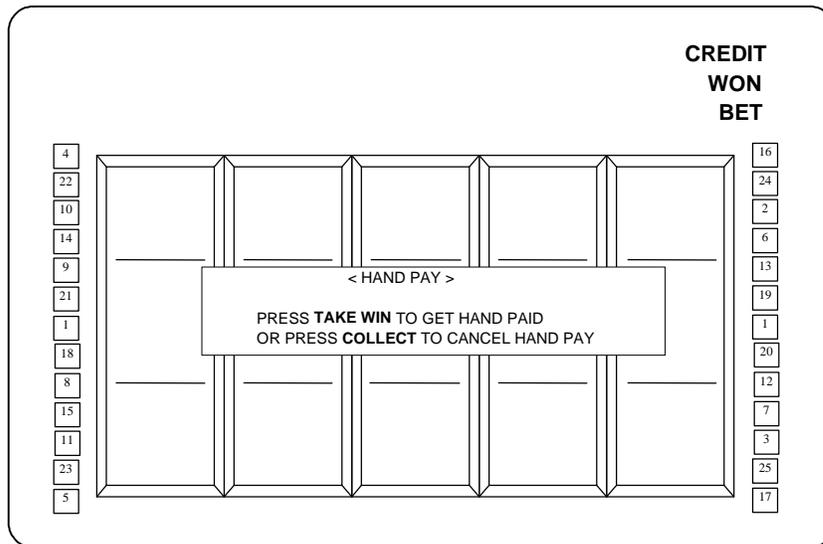
If the player presses take win button, then the machine will lock up and the lockup status will be cleared by activating the Reset Key Switch clockwise. Residual credit hand pay lockup can always be canceled by the player but the cancel credits which are bigger than or equal to the cancel credit level can only be canceled when the player is allowed to cancel hand pay lock up as set in the ram clear setup configuration. In these cases, the 'OR PRESS COLLECT TO CONTINUE PLAY' message will be displayed and the player still can cancel the hand pay lockup even after take win button has pressed.

Activating the Reset Key Switch clockwise will clear the hand pay lock up, and clear the credit meter. The Credit Meter will become zero and the machine will return to the normal operation.

After reset the hand pay lock up with the reset key, the 'CANCEL R XXX.XX' message will be displayed on the bottom of the screen.

4   SPARE PARTS LIST

GLOSSARY

Emax	
Emax International	Refers to the following Jurisdictions:
All	Available for all models

PART NO.	JURISDICTION	MODEL	DESCRIPTION
Power Supply			
602631200	**All**	**EMAX**	Switching Regulator 5V
602631400	**All**	**EMAX**	Switching Regulator 12V

602631600	All	EMAX	Switching Regulator 24V
GPT G3 Note Validator			
ARGUS G3 ZA	SAF	EMAX	GPT G3 HEAD
GPT G3 Note Stacker			
6MA0061 4MA0064	Standard (AUD) Universal (NZ)	EMAX	

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GPT G3 Enclosure			
6MA0060	For Standard Stacker	EMAX	GPT G3 Enclosure
GPT Bill Entry			
2C0006400	ALL	EMAX	GPT Bill Entry Bezel
GPT Bill Entry Tray			
2C0006600	ALL	EMAX	GPT Bill Entry Tray

Condor Plus CP133 coin validator

CN133 PLUS ZA	RAND	EMAX	
			Condor Plus CP133 coin validator

Diverter Solenoid

600434200	ALL	EMAX	
			Diverter Solenoid

Solenoid Spring

0A0120400	ALL	EMAX	
			Solenoid Spring

Motherboard DPX 80			
CC0012A00	All	EMAX	Motherboard DPX 80
I/O PCB			
CC0014A00	ALL	EMAX	I/O PCB

Backplane PCB			
CC0010A00	All	EMAX	Backplane PCB
Memory PCB			

CC0018A00	ALL	EMAX	
			 Memory PCB
Monitor PCB			
NA	ALL	EMAX	
			 Monitor PCB
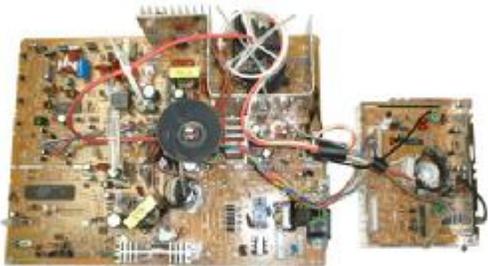
Monitor			
602817000	All	EMAX	Monitor
Touch Screen Sensor			
600228000	ALL	EMAX	Touch Screen Sensor
Touch Screen Controller			
609912400	ALL	EMAX	Touch Screen Controller

GM Hopper			
CC0350B00 **CC0350C00**	AU $1 NZ $2	EMAX	GM Hopper
Hopper PCB			
C05311A10	ALL	EMAX	Hopper PCB
Photo Interrupter			
60029200	ALL	EMAX	Photo Interrupter

Coin Guide Plate			
0C0307000	All	EMAX	Coin Guide Plate
Coin Wiper			
0P0302600	ALL	EMAX	Coin Wiper
Knife			
0P8020600		EMAX	Knife
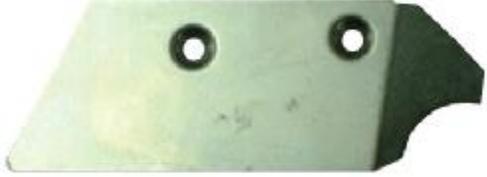
Pin Wheel			
0P4301000		EMAX	Pin Wheel
Shelf Wheel			
0P0305000		EMAX	Shelf Wheel
Agitator			
2P0302200	ALL	EMAX	Agitator

DC Motor			
600848000	All	EMAX	DC Motor
Speaker			
601127200	ALL	EMAX	Speaker
Speaker (Woofer)			
601129000	ALL	EMAX	Speaker (Woofer)

Counter Assembly			
601622000	All	EMAX	Counter Assembly
Counter Cover Detection Switch			
600135000	ALL	EMAX	Counter Cover Detection Switch
Fan			
609949200	ALL	EMAX	Fan

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Rocker Switch			
600343000	All	EMAX	Rocker Switch

Safety Door Switch			
600121000	ALL	EMAX	Safety Door Switch

FL DC Inverter Unit			
60241600	ALL	EMAX	FL DC Inverter Unit

FL Socket Unit			
602373200	All	EMAX	FL Socket Unit
Mini Fuse 0.5A			
601575000	ALL	EMAX	Mini Fuse 0.5A
Mini Fuse 6.3A			
601574400	ALL	EMAX	Mini Fuse 6.3A

LED Lamp			
4MA0067	Blue	EMAX	
4MA0066	Green		
4MA0069	Purple		
4MA0068	White		
4MA0065	Yellow		Led Lamp
Reset/Audit Key Switch			
601367000	ALL	EMAX	Reset/Audit Key Switch
Power Save Key Switch			
601356400	ALL	EMAX	Power Save Key Switch

Photo Sensor Door			
600290500	All	EMAX	Photo Sensor Door
Photo Sensor Cabinet			
600290600	ALL	EMAX	Photo Sensor Cabinet
Photo Sensor Cash Box			
600205001	ALL	EMAX	Photo Sensor Cashbox

5   TROUBLE SHOOTING

Machine Error Messages	Possible Solution
Ram Error	• Check Battery on memory board • Perform RAM Clear procedure as per section 1.8
ROM Replaced Do RAM Clear	• Power down EGM, press reset switch SW1 on memory board, wait 5 seconds and release. • Switch on EGM and follow RAM clear procedure as per section 1.8
Play Suspended 1 to 6	• Check Harnessing on Comms board on the logic unit
Logic Security Cage Open	Check Cherry switch on front of logic cage
Cash Box Door Open	• Faulty cash box door switch • Check harness for damage • Faulty part on game board
Main Door Open	• Faulty door optics either emitter or receiver • Check harness for damage
Stacker Door Open	• Check stacker switch/s • Check harness for damage
Self Audit Error	• Perform full RAM clear procedure as per section 1.8
Hopper Disconnected Or Optic Jam/Failure	• Remove and reinsert hopper • Check 24 volts from power supply • Check harness for damage and pins • Replace hopper
Hopper Overpay	• Check and clean optics on hopper • Replace hopper
Coin Out Error-Hopper Empty/Jam	• Fill hopper with coins • Remove any jammed coins in hopper
Diverter Fault	• Replace Diverter • Check harness for damage
Coin in Jam	• Remove any jammed coins in Validator • Clean optics in coin Validator • Replace Coin Validator
Coin in yo-yo	• Turn reset key • Clean optics in coin Validator
ROM Error	• Perform full RAM clear procedure as per section 1.8 • Replace game EPROM's
Coin in Time Out Disconnected	• Clean optics in coin Validator • Replace Coin Validator

Battery Fail	• Check Battery on Motherboard • Replace battery • Replace Motherboard
Over Temperature	• Check fan inside logic unit • Check 12 volts on power supply • Replace fan • Replace power supply
Hard Meter Failure/Disconnected	• One or more of the eight meters faulty • Check 24 volts on power supply • Replace meter bank • Replace power supply • Replace motherboard • Check harness for damage
System Error	• Perform full ram clear as per section 1.8 • Replace logic unit
Hard Meter Security Cage Open	• Check switch on hard meter cage • Check harness for damage • Replace switch
Stacker Full	• Remove stacker box and clear notes
Note Acceptor Error	• Clean and Calibrate head • Faulty note Acceptor • Check Connection from logic unit to Head • Check harness for damage • Perform full RAM clear procedure as per section 1.8 • Comms port on logic unit faulty
Stacker Removed	• Remove and reinsert stacker • Check stacker switch • Check harness for damage
Belly Door Open	• Check belly door switch • Check harness for damage
Note Acceptor Disconnected	• Clean and calibrate head • Check connection from logic unit to head • Check harness for damage • Perform full RAM clear procedure as per section 1.8 • Comms port on logic unit faulty • Replace logic unit
Note Acceptor Jam	• Remove jammed notes in head or stacker • Clean and calibrate head

Printer Error	• Press online button • Faulty printer
Printer Paper Out	• Printer has run out of paper • Replace paper

6   APPENDIX

6.1   Jean 19" Monitor Manual

6.2   GPT Argus Note Acceptor Manual