



SMART POOL BOARD APPLICATIONS GUIDE

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SMART POOL

The *SMART POOL* board (*SP*) is a new generation battery powered control unit for pool tables and simple vending machines. In normal operation the system remains in a “standby” low power state until a coin is inserted – the *SP* board then “wakes-up” to accept the coin and register game credits. The credit can automatically or manually initiate a game.

Features

- Low power consumption from standard 12v batteries
- Multi-coin or token acceptance using industry standard coin mechs (NRI G13, Microcoin S5 and QL etc.)
- Coin “Wake-up” from NRI sensor or Microcoin faceplate
- 12v Motor or solenoid operation, with cam switch input
- LED credit available indicator drive
- Integral electronic fuse (Polyswitch) and protection against incorrect battery connections.
- Integrated dual function 2 row by 16 character LCD display – use as a credit display and for set-up menus. Clipped to the *SP* board as standard, can be unclipped and mounted remotely on the machine.
- Full audit with real-time clock.
- On board smart card socket for audit data collection, *SP* board set-up and full “in the field” software upgrade
- Smart Card Electronic data collection fully integrated with the JCA Systems Ltd *Site Manager* software suite:
 - Collect data from the *SP* board using a smart card (100+ readings capacity per card)
 - Read the card into the Site Manager software on a PC
 - Produce performance reports by machine or site
 - Print reports or export to Microsoft Excel ®
- Fully programmable operation with simple set-up using on board menu switch or a smart card and *SP Utility* software on a PC. Smart card allows rapid and consistent set-up of machines
 - Play price
 - Auto play / manual start switch
 - Bonus levels (2)
 - Maximum credit level
 - Discount (Happy Hour) pricing
 - Battery low level threshold
 - Standby LCD message on/off
 - Motor/solenoid selection and timings (smart card only)
 - Coin and Token Values (smart card only)
 - Set time and date (menus only)
 - Language selection (English or alternate)
 - Text messages (smart card only)



Technical Specification

Board Size	120mm x 100mm
Fixing Holes(4)	110mm x 90mm x 3.2mm diameter
Supply Voltage	10.0v to 15.0v DC
Standby Current	500uA typical, no standby LCD message 1.5mA typical with standby message on LCD
Active Current	100mA (5 secs per coin)
Coin Accept Current	700mA (150 milli-secs per coin)
Motor Output	Transistor drive, max current 1A at 12v DC
Meter Output	Transistor drive, max current 100mA at 12v DC



Connections

PL8 **Coin Mech** – NRI G13 / Microcoin QL / SP

PL7 **Coin Mech** – Microcoin S5 / S6

PL1 **NRI Wake-up Sensor.**
Mating Connector : Molex KK 0.1" part number 22-01-2065 with crimps 08-50-0032

Pin	Function
1	5 volts (1mA max)
2	Wake-up (active low)
3	0 volts
4	0 volts
5	Reserved
6	Reserved

PL2 **Microcoin faceplate** sensor/wakeup
Mating Connector : Molex KK 0.1" part number 22-01-2045 with crimps 08-50-0032

Pin	Function
1	Photo-transistor (active low)
2	0 volts
3	LED anode
4	0 volts

PL3 **Free Play Switch**
Mating Connector : Molex KK 0.1" part number 22-01-2035 with crimps 08-50-0032

Pin	Function
1	Normally open contact
2	No connection
3	Common contact

PL12 **Power and Motor**
Mating connector : Molex KK 0.156" part number 09-91-1200 with crimps 08-50-0106

Pin	Function
1	Battery positive (+12v)
2	Battery negative (0v)
3	Motor/Solenoid positive
4	Motor negative and motor cam switch common
5	Motor cam switch normally open contact
6	Coin Meter positive
7	Coin Meter negative
8	Start Button normally open contact
9	Start Button common contact
10	No connection – polarising key
11	No connection
12	LED Credit indicator

PL5 Factory programming only



SMART POOL – Board Setup

The *SP* board can be configured using the on board menus, or with a smart card using the Smart Pool Setup Utility on a PC.

Menu Operation

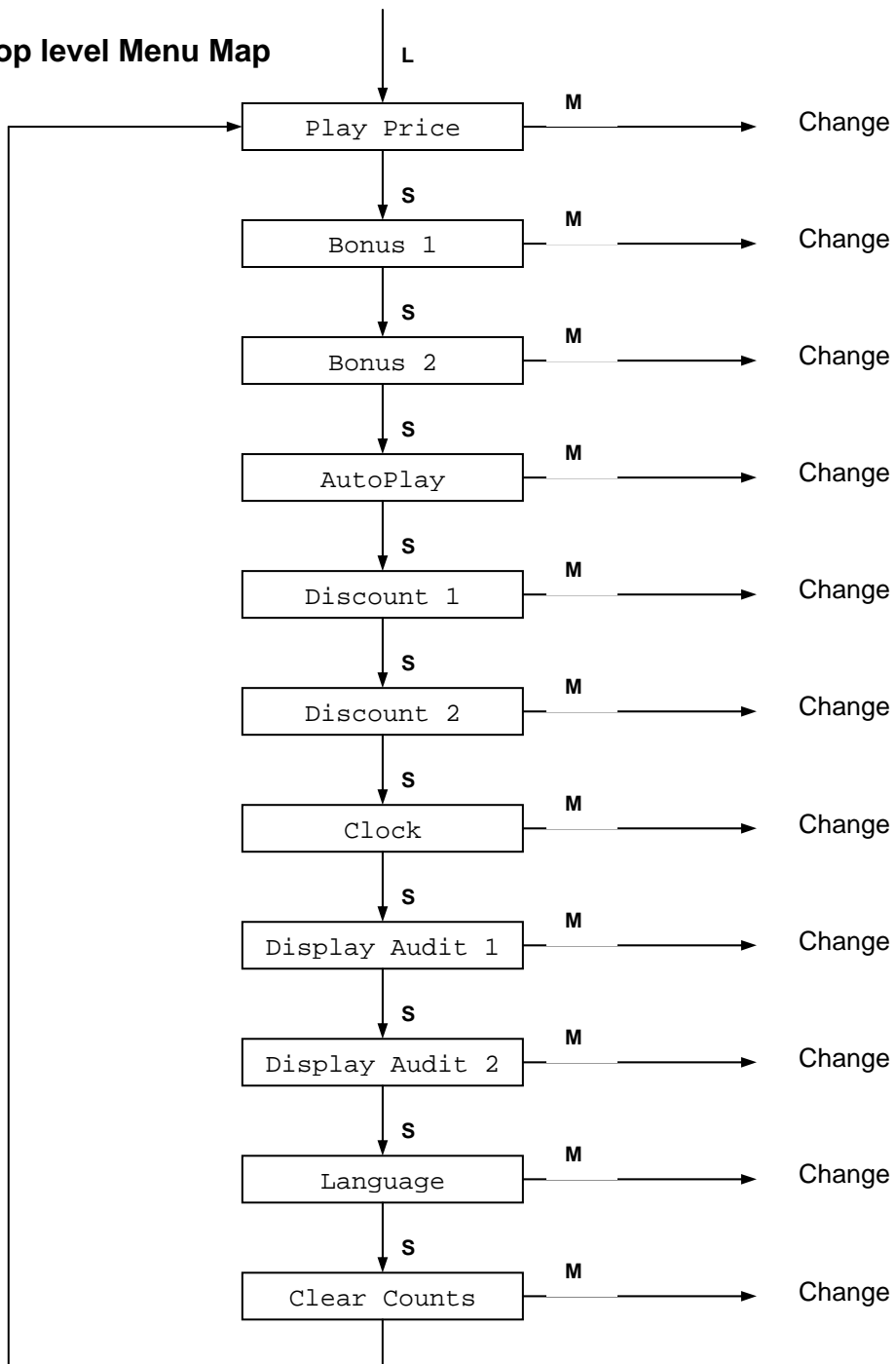
Menus are accessed and controlled with the single “MENU” key with the length of press differentiating between tasks:

MENU Key	Time held ON	Action
Short press (S)	< 1 second	Steps to next item in menu
Medium Press (M)	>1 second, < 5 seconds	Enters the next menu level/ sub menu, or displays / changes a value
Long Press (L) HOLD until display changes	> 5 seconds	Enters menus from normal operation, or exits from the current menu level

If the MENU key is not pressed for 15 seconds the menus will exit, one level at a time.



Top level Menu Map





Play Price

Play Price
£x.xx

- Short Press** Increments the price by the lowest value coin
- Medium Press** Clear the price to Zero
- Long Press** Exit this menu

Bonus (1 or 2)

Credit Level
£x.xx

- Short Press** Increments the level by the lowest value coin
- Medium Press** Clear the level to Zero
- Long Press** On to Bonus games step



Bonus games
nnnnn

- Short Press** Increments the number of games extra awarded at this level
- Medium Press** Clear the games to Zero
- Long Press** Exit this menu

Autoplay

Autoplay
OFF

- Short Press** Toggles OFF/ON
- Long Press** Exit this menu



Discount (1 or 2)



Discount n
OFF

- Short Press** Toggles OFF/ON
- Long Press** On to Discount Price step

Discount Price
fx.xx

- Short Press** Increments the price by the lowest value coin
- Medium Press** Clear the price to Zero
- Long Press** On to Discount Start Time step

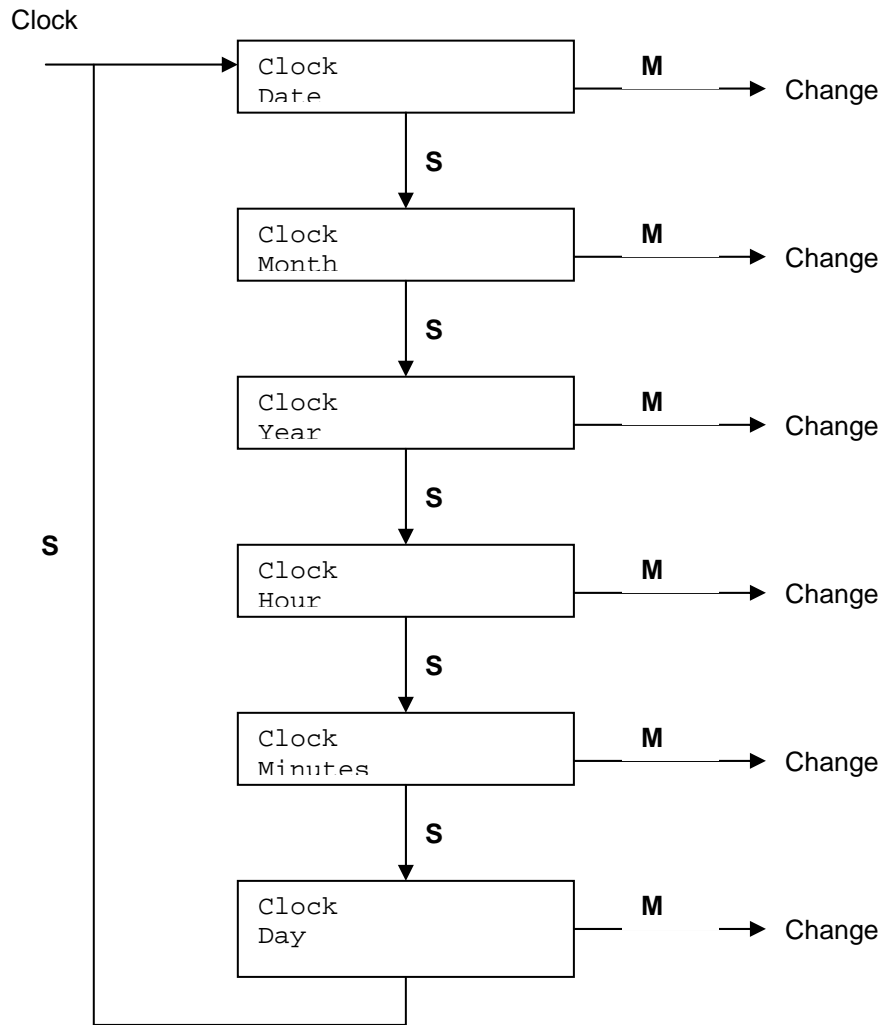
Discount Start
hh:mm

- Short Press** Advances the start time by 10 minutes
- Medium Press** Clear the time to 00:00
- Long Press** On to Discount End step

Discount End
hh:mm

- Short Press** Advances the end time by 10 minutes
- Medium Press** Clear the time to 00:00
- Long Press** Exit this menu

Note : Discounts set through the menus are valid EVERY day of the week. It is possible using the Smart Card setup option to configure the discounts for certain days of the week.



In the "Change" options the menu switch options are :

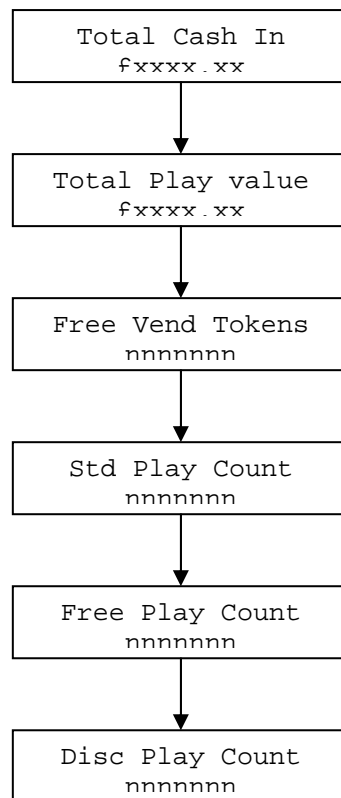
- | | |
|-------------|-------------------------|
| Short Press | Advances the value by 1 |
| Long Press | Exit this menu level |



Display Audit (1 and 2)

Audit information is stored within the *SP* unit as both lifetime totals and a resettable values. The resettable values can be cleared using the “Clear Counts” menu option or when the audit information is read using a smart card.

These options display the audit information in the sequence below. Display Audit 1 shows the lifetime totals, Display Audit 2 shows the resettable values (indicated by a “R” in the bottom left hand corner of the display).



The Audit Fields are as below:

Total Cash In	Total value of Coins inserted
Total Play Value	Total value of all the games played
Free Vend Tokens	Count of the number of free vend tokens
Std Play Count	Count of the number of games played at normal price
Free Play Count	Count of the number of free games played
Disc Play Count	Count of the number of games played at discount price



Language

Language
English

Short Press Toggles between English and Alternate language

Long Press Exit this menu

Clear Counts

Clear Counts

Medium Press Clears the resettable audit counts

Long Press Exit this menu



Smart Card Operation

The *SP* board recognises three different types of smart card :

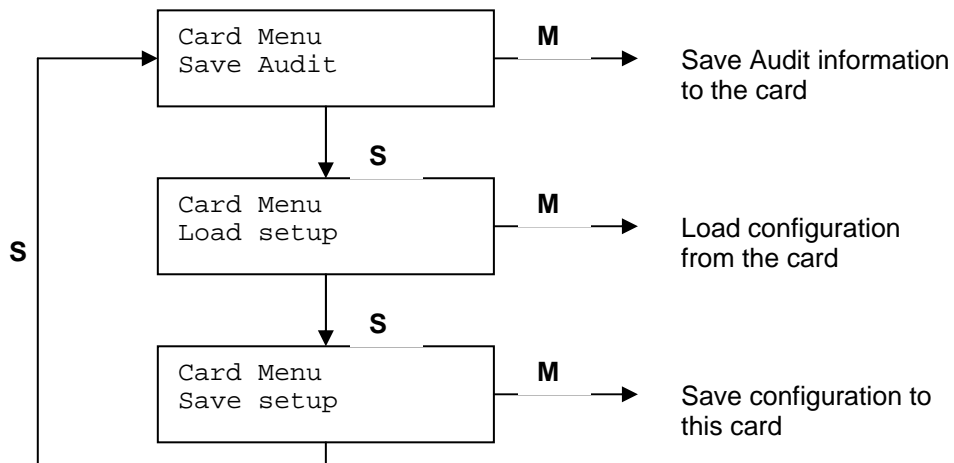
- Setup Card** Used to load a configuration previously set up using the PC utility.

- Audit Card** Used to electronically read all the audit counter information from the *SP* board. A single card can hold readings from 100+ machines. This card is fully compatible with the Site Manager management software and collections can be made on the same card from both *SP* units and the **EC3** gaming machine audit unit.

- Software Reload** Installs a new version of software into the *SP* board.

Inserting a smart card into the on board slot (gold contacts to the board itself) initiates the corresponding operation – follow the instructions on the display.

If a smart card is inserted when the menus are active, a special smart card menu appears :





SMART POOL PC Setup Utility

The setup utility enables Setup smart cards to be used to set the configuration of a *Smart Pool* controller board. The utility works in conjunction with a Chipdrive 330 or SCM Microsystems SCR3311/SCR335 smart card reader.

- **System Requirements**

- VMC165 Utility CD
- USB Card Reader
- 256K I2C Smart Cards
- PC with the following specification:

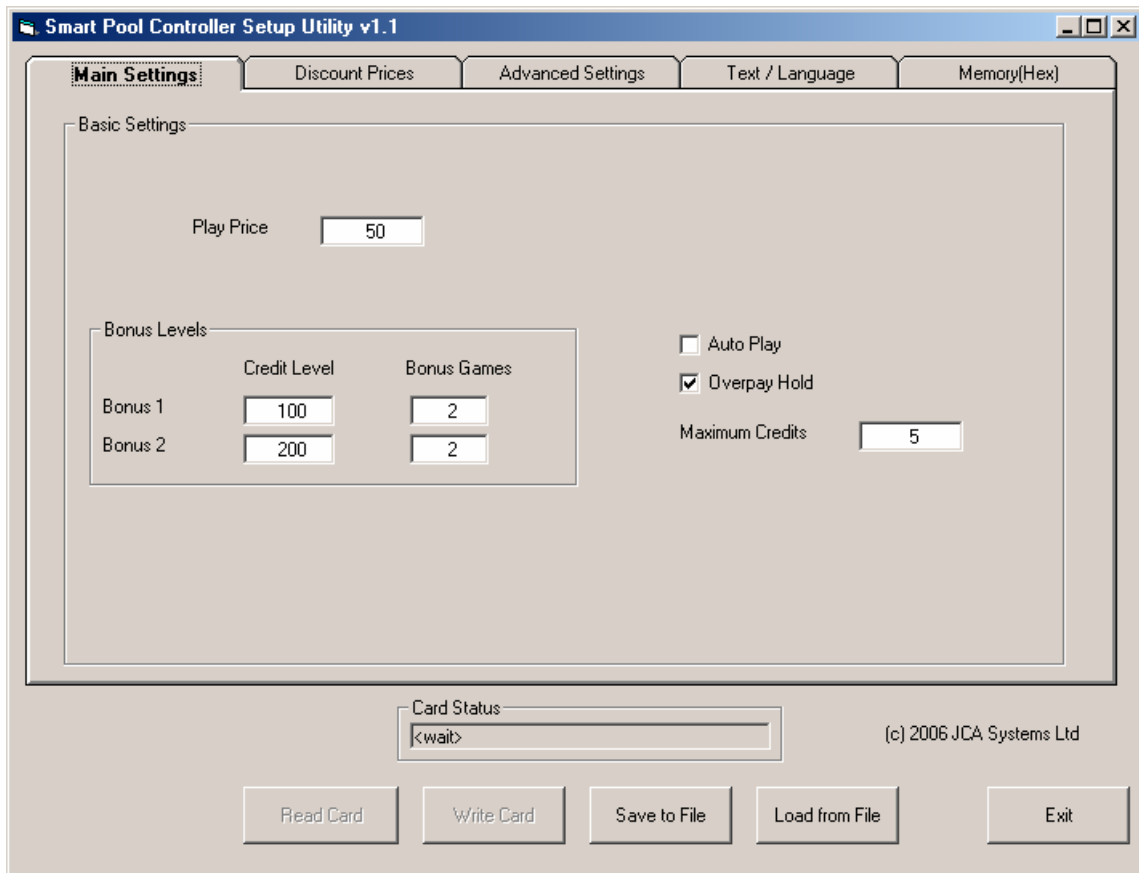
	Minimum	Recommended
Processor	Pentium 200MHz Processor	Pentium P4 1000MHz or better
RAM	128M byte	> 256M byte RAM
Free Hard Disc Space	20Mbyte	> 100Mbyte
Graphics	800x600 16 colour SVGA	1024 x 768 256 colour SVGA
Operating System	Windows 98SE	Windows Me, 2000 or XP
CD-ROM	Yes	Yes
USB port	One	More than One

- **Software Installation**

- (i) Installation of Card Reader Drivers
 - Insert the CD into the CD ROM drive
 - Do NOT Plug the card reader into the PC at this stage
 - Run the "setup.exe" programme for the type of card reader to be used (In the folder "Card Reader Drivers" and follow the instructions
 - Now plug the card reader into a spare USB port
- (ii) Installing the Smart Pool Setup Utility Application
 - Run the programme "setup.exe" in the "Setup Utility" folder on the CD and follow the instructions.



MAIN CONTROLS



Read Card – read an existing smart card

Write Card – programme a card with the current settings

Save to File – save the complete settings to a text file

Load from File – restore previously save configurations

Exit – close the utility programme

Card Status – shows the status of the card reader

<wait>

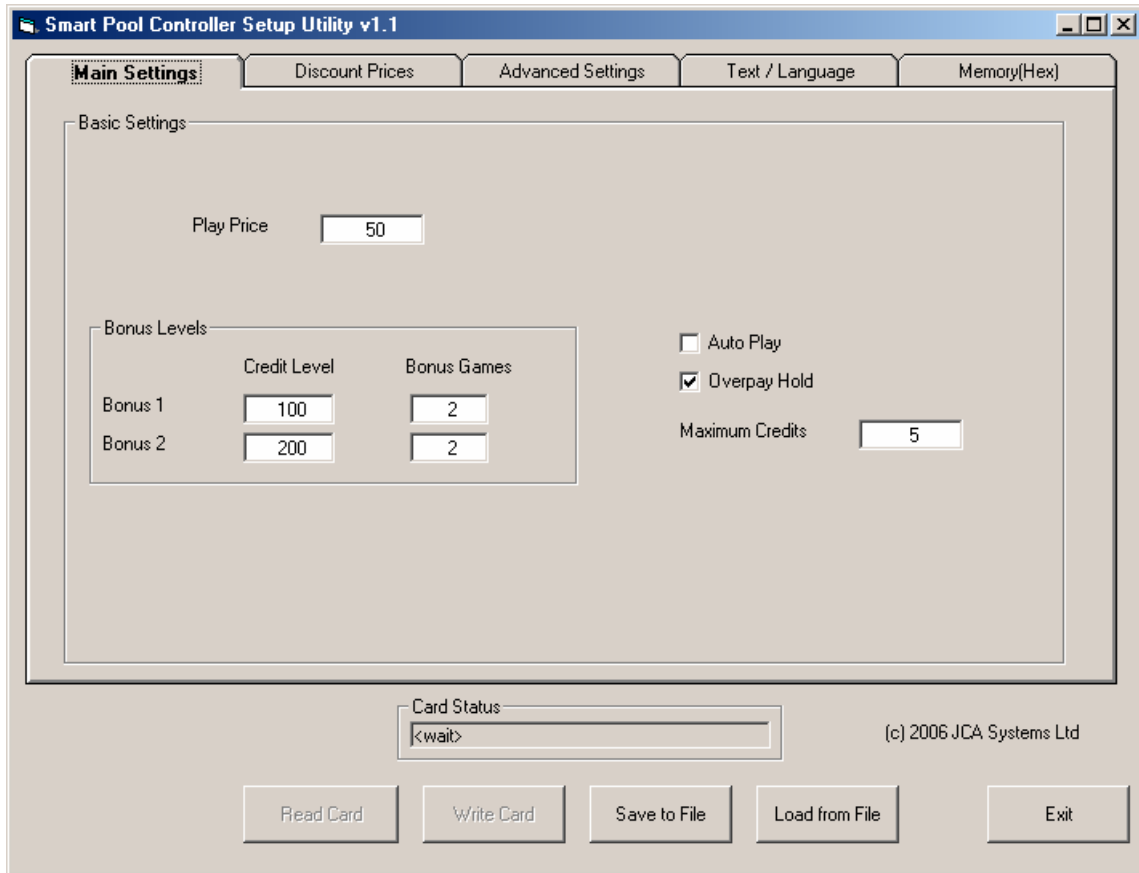
No card inserted (Read and Write Card buttons disabled)

<active> <I2C 256K>

256K card inserted



MAIN SETTINGS PAGE

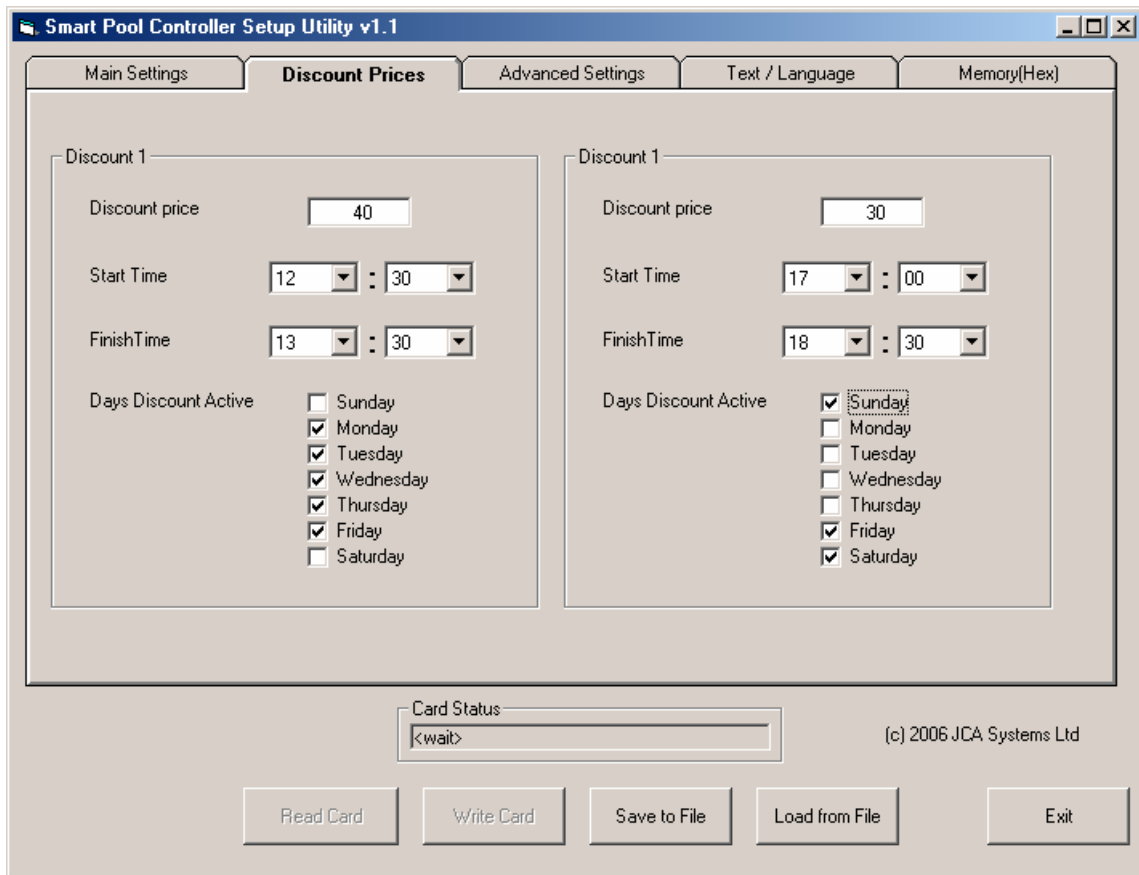


Basic Settings

- Play Price** – set the price in base units
- Bonus Levels**
 - Credit Level** – amount at which bonus is gained
 - Bonus games** – number of games added when the bonus is achieved
- Auto Play** – check the box for automatic issuing of game credits. Blank for manual operation, dispensing games when the Start switch is pressed.
- Overpay Hold** – check the box to retain excess cash credit (the amount of money held in excess of the last accumulated game credit)
- Maximum Credits** – This is the maximum number of games that can be bought at any one time to prevent a machine being monopolised. Coin acceptance is disabled once this limit has been exceeded.



DISCOUNT PRICES PAGE



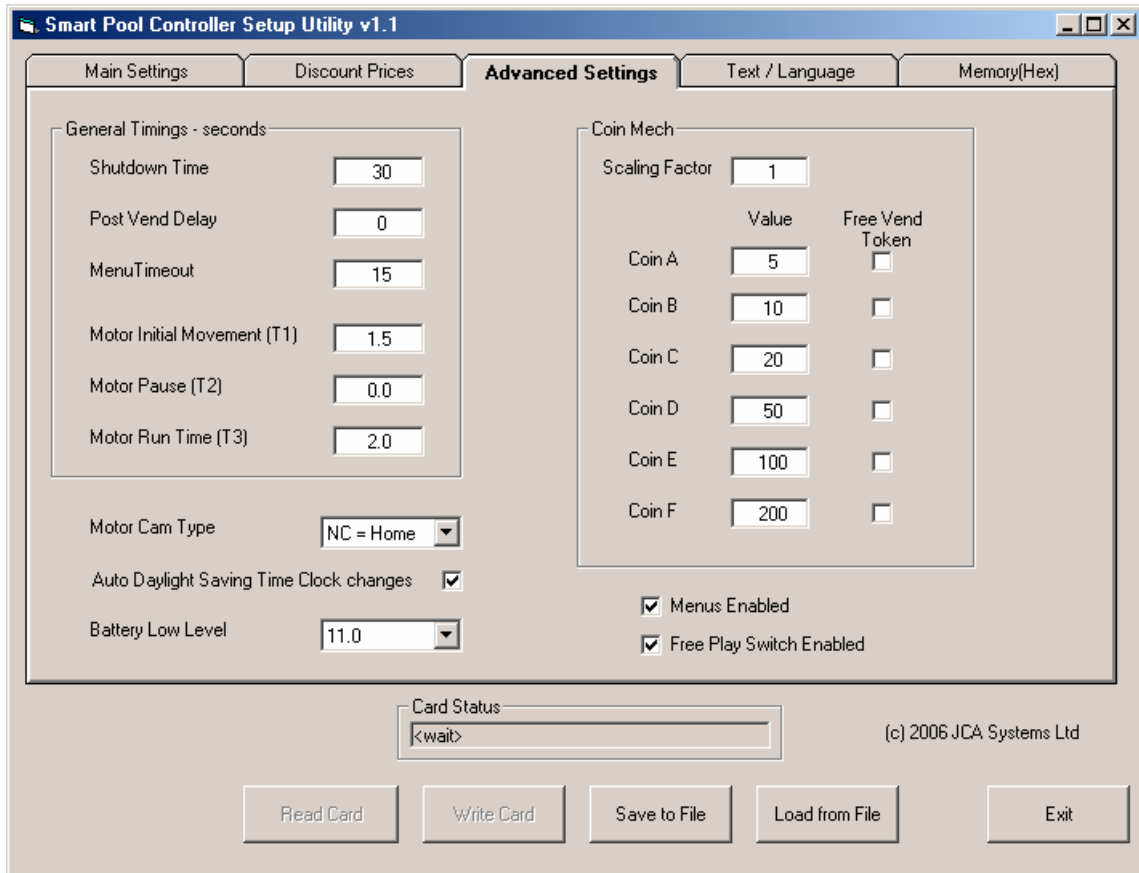
Discount Prices - Entered in base units (pence, cents etc), so for UK operation 50 = 50 pence, 150 = £1.50.

Start Time / Finish Time – sets the time period during which the discount price is active

Days Discount Active – check the boxes for the days on which the discount is valid



Advanced Settings Page



Shutdown Time - number of seconds of inactivity before the *SP* board goes into low power “standby” mode.

Post Vend Delay – minimum delay after the vend is complete before the machine shuts down.

Menu Timeout - number of seconds of inactivity before the menus shut down automatically

Motor Cam Type select between **None** (for pulsed operation) and **NO** (normally open) or **NC** (Normally Closed) for the motor home position switch.

Motor timings T1 - T3 (tenths of seconds).

The motor can be operated in pulsed or home switch modes with an optional pause.

- T1** Motor initial movement time
- T2** Pause Time
- T3** Cycle completion time – In pulsed mode this is the time the motor runs for. In Home switch mode this is a timeout for this phase – the motor will stop immediately the home switch position is reached.



Auto Daylight Saving Time changes

– check for automatic changes plus/minus one hour to the internal clock on the last Saturday in March/October.

Menus Enabled

– check this option to allow the on board menus to be accessed.

Free Play Switch Enabled – check this option to allow the free play switch to be used.

Battery Low Level – voltage level at which the unit goes “out of service”

Coin Mechanism

Scaling Factor

– multiplier for the coin values

Coin n value

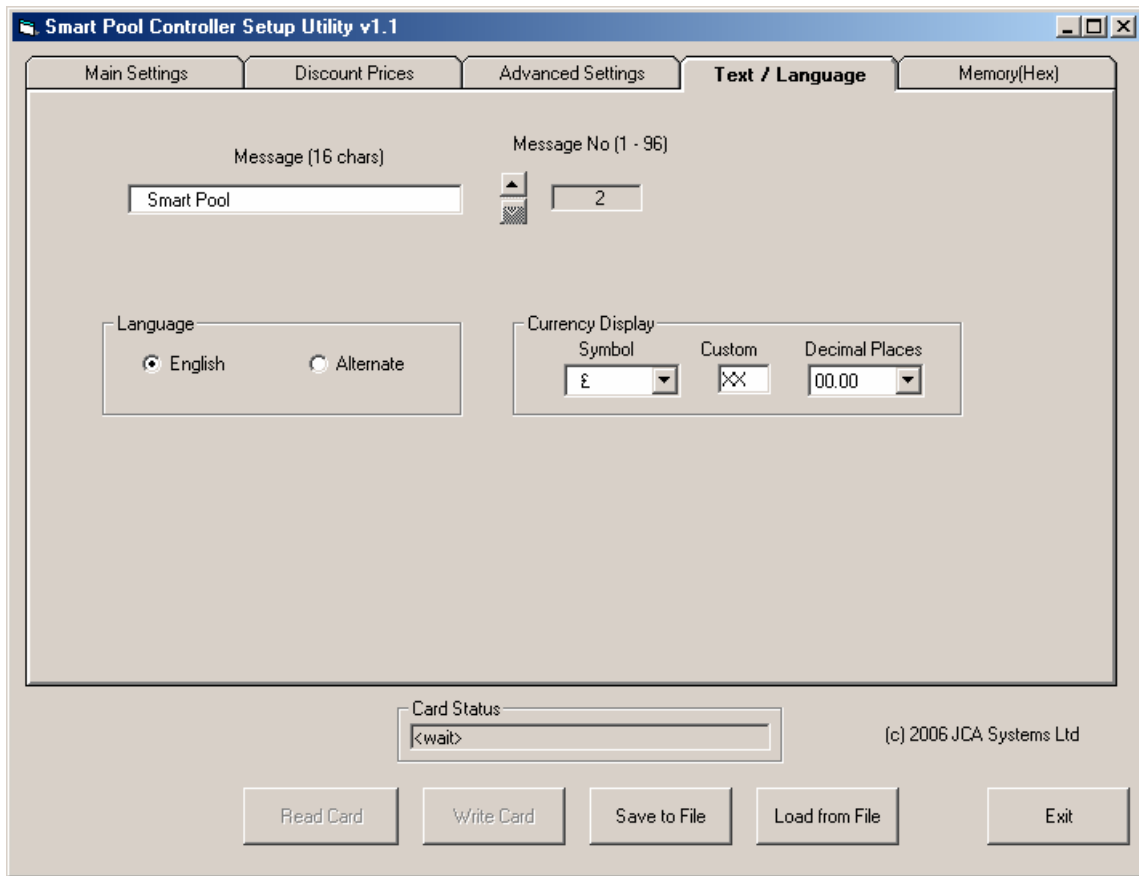
– real value of the coin in base units divided by the Scaling Factor. The Scaling Factor must be set so that any coin value divided by the scaling factor never exceeds 250.

Free Vend Token

- tick the corresponding box if the coin channel is used for a free vend token (the coin value is then ignored)



TEXT / LANGUAGE PAGE



Messages

The *Smart Pool* unit contains two sets of text for the LCD display. **English** is in ROM whilst the **Alternate** language is held in EEPROM. This page allows all the Alternate messages to be customised or translated. The EEPROM supports 96 main messages of up to 16 characters.

When changing text take care in the presentation of the messages on the 2 line by 16 character display and be aware that some displays are made up from multiple messages.

Currency Display

Symbol -Select the desired currency Symbol (£, €, \$, Fr, Kr, none or custom).

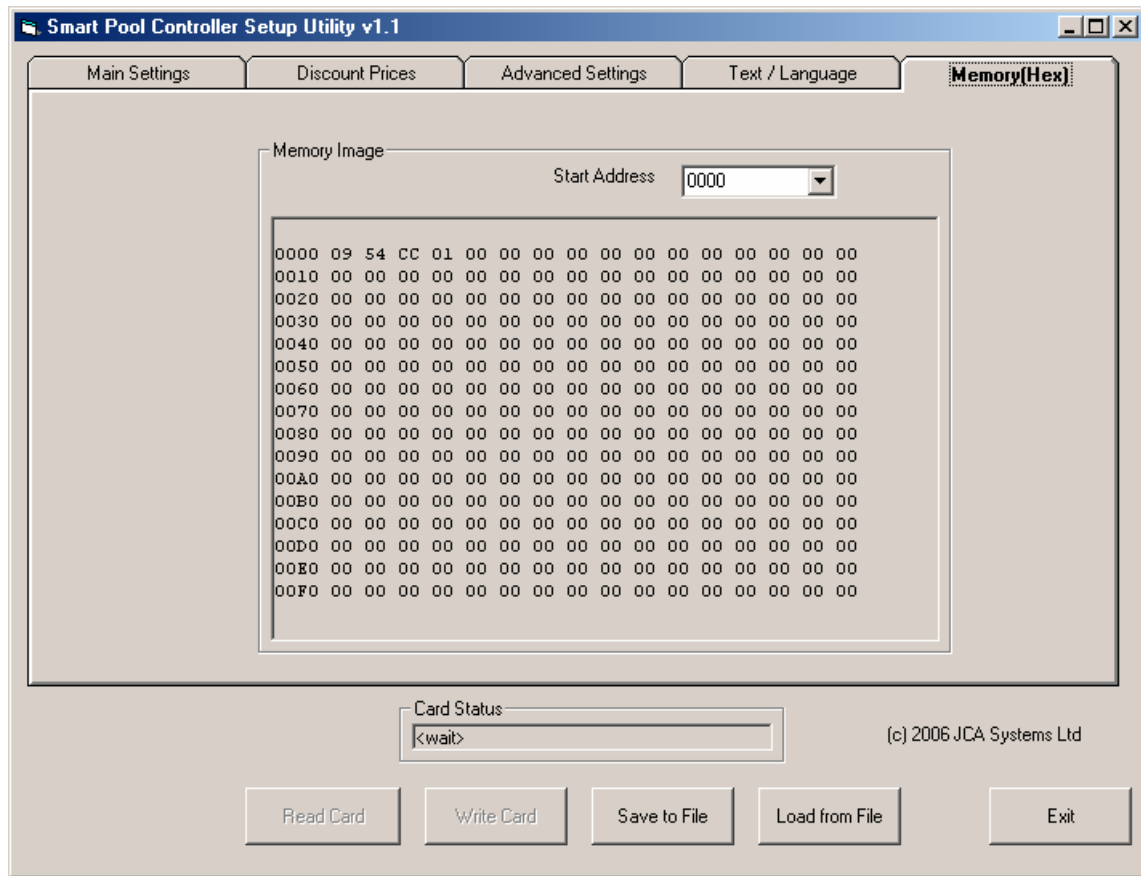
Custom -The Custom currency symbol can have one or two characters.

Decimal Places - Select the decimal places to be displayed

Note – the *Smart Pool* board works internally in base units, normally pence, cents etc. Pricing and coin values are set in base units.



MEMORY (HEX) PAGE



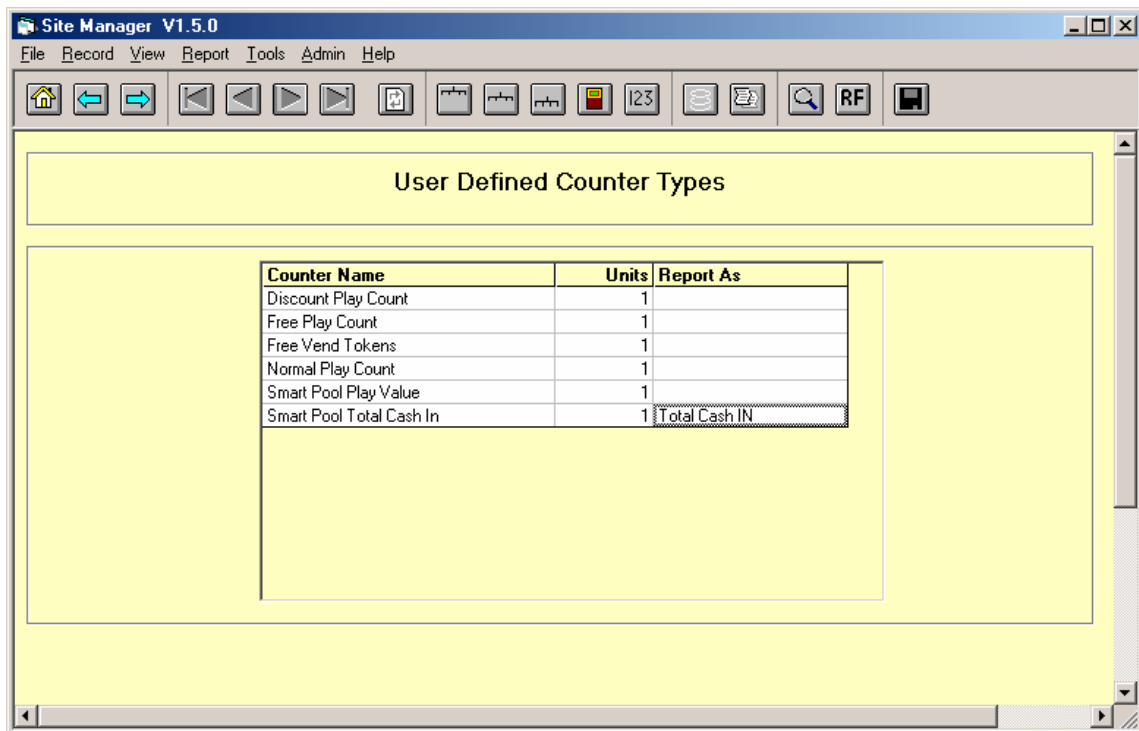
This page is for diagnostics only



Using Smart Pool with the *Site Manager* software application.

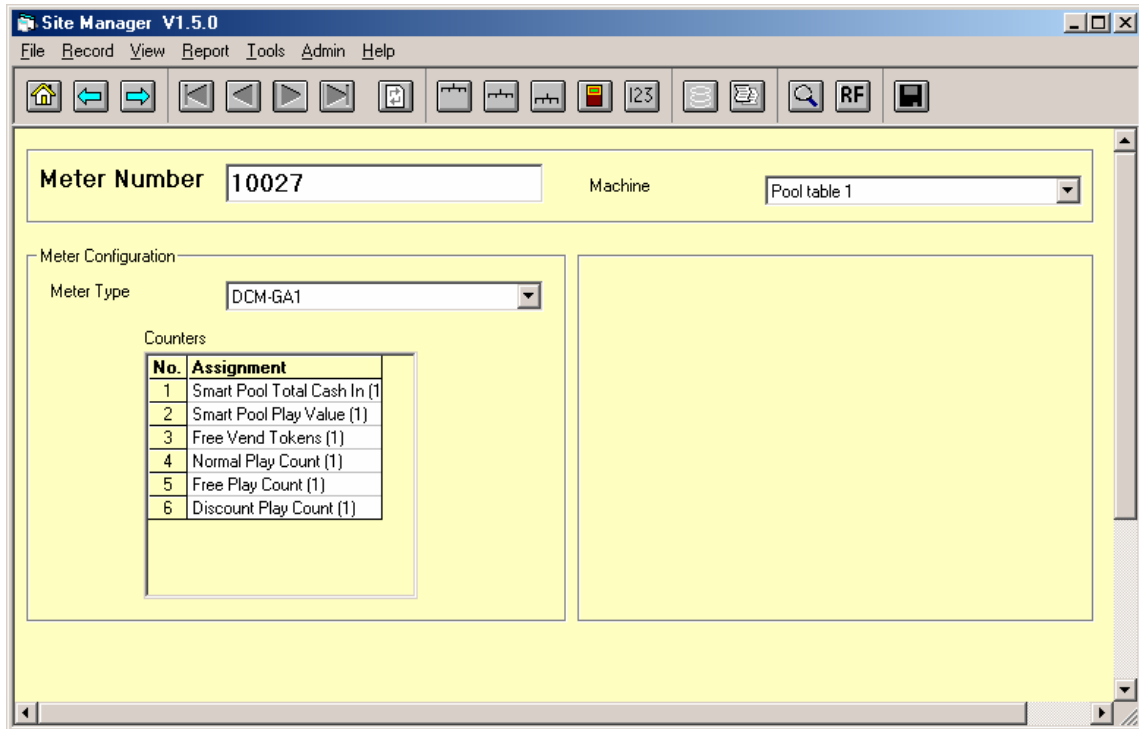
Refer to the *Site Manager* User Guide for details of how to use the management / reporting application.

To include *Smart Pool* units within *Site Manager* first set up the “User Defined Counters” below:





When defining a Meter record for a *Smart Pool* Unit set the counter types as “DCM-GA1” type with the counters linked to the User Defined Counter Types as below:



The Counter Assignments MUST be in the order shown.

The Meter Number is the serial number of the *Smart Pool* Unit. This, and the currently set Site Code, can be displayed by pressing the menu button for 2 seconds.

The Site Code set within the *Smart Pool* unit MUST be the same as the site code set within *Site Manager*. New *Smart Pool* Units will “inherit” a site code from the first smart card used to take audit readings from them. Refer to the *Site Manager* User Guide for details of how to overwrite a Site Code in a *Smart Pool*/Meter unit.

When running reports for a machine or for a site the cash takings from *Smart Pool* units will be included within the overall Site “Cash In” totals. The other readings will be presented on the 3rd page of the corresponding reports under their User Defined Counter titles.

