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1958/44, 1967/60, 2017/48,
2162/50, 2176/42, 2223/17,
2286/30, 2437/19, 2536/26,
2619/26, 2650/18)



III(5)a

Certificate
Pursuant to section 12 of the Weights and Measures Act 1985
Series V004 Revision 10

Revision 11 to the following certificates

Cert. No.	Supplement No.	Valid Until	Cert. No.	Supplement No.	Valid Until
1828	28	19 May 2013	2223	17	10 November 2012
1918/74*	49	18 January 2016	2286/58*	30	26 October 2016
1940	44	5 May 2016	2437/41*	19	01 March 2016
1958/53*	44	17 August 2016	2486/54*	18	26 October 2016
1967/66*	60	01 March 2016	2536	26	26 October 2016
2017	48	04 September 2016	2619/43*	26	26 October 2016
2162/92*	50	18 October 2016	2650/55*	18	01 July 2016
2176/78*	42	18 October 2016	---	----	----

(* Refers to the dispenser only, the self service device described in these certificates is not part of this approval

In accordance with the provisions of section 12 of the Weights and Measures Act 1985, the Secretary of State for Innovation, Universities and Skills hereby certifies as suitable for use for trade a pattern of a liquid flowmeter, as described in the descriptive annex to this Certificate, and having the following characteristics:-

DISPENSER(s): Dispensers described in certification numbers: 1828, 1918, 1940, 1958, 1967, 2017, 2162, 2176, 2223, 2286/58, 2437, 2486, 2536, 2619 and 2650.

SITE CONTROLLER: DOMS PSS2000 or PSS5000 or DOMS PSS5000 Compact as described in the descriptive annex. Torex Retail 9730 site controller or Torex Forecourt Link as referenced within the descriptive annex.

KIOSK CONTROL UNIT AND POINT OF SALE: Arciris IRIDIUM combined kiosk control and point of sale system as described in the descriptive annex.

OPTIONAL UNATTENDED PAYMENT TERMINAL SPOT M3, Wayne or Tokheim as described in the descriptive annex

Under the provisions of section 12(6) of the said Act, the validity of this certificate is limited as shown above.

Note: This certificate relates to the suitability of the equipment for use for trade only in respect of its metrological characteristics. It does not constitute or imply any guarantee as to the safety of the equipment in use for trade or otherwise.

This revision replaces previous versions of this certificate.

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Signatory: G Stones
for Chief Executive



CONTENTS

1 INTRODUCTION

2 CONSTRUCTION

- 2.1 Point of sale
- 2.2 Doms PSS2000 forecourt control unit
- 2.3 Back office PC

3 OPERATION

- 3.1 Control method
- 3.2 Normal sales operation (primary and subsequent points of sale)
- 3.3 Method of payment

4 INTERLOCKS AND SECURITY FEATURES

- 4.1 UPS
- 4.2 Fuel price changes
- 4.3 Duplicate receipts
- 4.4 Operating system security
- 4.5 Software version

ILLUSTRATIONS

- Figure 1 System schematic
- Figure 2 DOMS PSS200 forecourt control unit
- Figure 3 Epson M137A point of sale PC with built-in printer and customer display unit
- Figure 4 Epson M137A point of sale PC without printer
- Figure 5 Epson TM88 receipt printer
- Figure 6 Epson H5000 receipt printer (incorporating customer display unit)
- Figure 7 Uninterruptible power supply
- Figure 8 Customer display unit showing information layout
- Figure 9 Typical operator display screen layout
- Figure 10 Typical customer receipts
- Figure 11 TEC 5600 POS system (PC with 2 expansion slots)
- Figure 12 TEC 5600 PC with 4 expansion slots
- Figure 13 Epson IM-310 POS
- Figure 14 Rear of Epson IM-310 showing serial ports for connection to the DOMS
- Figure 15 Dione Xchequer EFT payment and loyalty terminal
- Figure 16 DOMS PSS 5000 enclosure
- Figure 17 DOMS PSS 5000 typical electronic component layout
- Figure 18 Central processing board (CPB508) display and menu navigation keys
- Figure 19 Epson IR-320 Model no. M156X
- Figure 20 Rear of Epson IR-800 Model no. M183A with cover removed
- Figure 21 View of back panel – cover removed - showing 24 V outlet
- Figure 22 IBM surePOS 563, showing integrated card swipe
- Figure 23 IBM surePOS 563, rear view showing integrated CDU
- Figure 24 IBM surePOS 563, schematic view showing ports and connections – cover removed
- Figure 25 Hewlett Packard RP 5000 POS PC (front and rear views)
- Figure 26 Epson IR 700 / IM 700 – front view
- Figure 27 Epson IR 700 / IM 700 – showing rear connections with protective cover removed

- Figure 28 Fujitsu team POS 2000-M, showing integrated card swipe
- Figure 29 Fujitsu team POS 2000-M, rear view showing CDU
- Figure 30 Fujitsu team POS 2000-M, schematic view showing ports and connections – cover removed
- Figure 31 Toshiba TEC ST-6501 – TFTST56 flat display showing integrated card swipe
- Figure 32 Toshiba TEC ST-6501 - LIUST51 CDU
- Figure 33 Toshiba TEC ST-6501, schematic view showing ports and connections – cover removed
- Figure 34 Aures Galeo POS PC (showing operator display)
- Figure 35 Aures Galeo POS PC (showing customer display)
- Figure 36 Aures Galeo POS PC showing ports and connections – cover removed
- Figure 37 Aures Odysse POS PC (showing operator display)
- Figure 38 Aures Odysse POS PC (showing customer display)
- Figure 39 Aures Odysse POS PC showing ports and connections – cover removed
- Figure 40 Xn905 POS PC (showing operator display)
- Figure 41 Xn905 POS PC (showing customer display)
- Figure 42 Xn905 POS PC showing ports and connections – underside
- Figure 43 SPOT M3 OPT on Stand
- Figure 44 SPOT M3 OPT Housing and Screen
- Figure 45 Wayne CRIND using the Spot M3
- Figure 46 DOMS PSS5000 Compact
- Figure 47 (TFL)/ Forecourt Interface Box schematic overview of system
- Figure 48 Forecourt Link Interface Box lid removed
- Figure 49 Forecourt Link Interface Box Control/PSU Board
- Figure 50 Control / PSU Board
- Figure 51 Torex Dispenser Interface Card type BA22800_B
- Figure 52 Torex Dispenser Interface Card type BA07603
- Figure 53 Gilbarco SPOT M3 Housing
- Figure 54 Gilbarco SPOT M3 Alternative Housing

Descriptive Annex

1 INTRODUCTION

Having the dispensers specified on page 1 connected via a DOMS PSS2000 forecourt control unit (FCU) to the Arciris IRIDIUM combined point of sale and kiosk control system.

The IRIDIUM is a combined kiosk control and point of sale system based on the EPSON IR POS with a serial link to the DOMS PSS2000 forecourt control unit. A back office computer, with connected modem and printer is also attached to the IRIDIUM system. The EPSON IR POS is a PC-based unit incorporating a touch screen. Attached to, or part of, the POS may be a magnetic card reader, barcode reader, receipt printer, cash drawer, customer display and an optional modem.

Multiple POSs may be connected, each having its own serial link to the DOMS PSS2000 FCU.

All primary POS mains powered components are powered via an uninterruptible power supply (UPS). A schematic diagram of the system is shown in Figure 1.

Throughout this document the word “button” refers to the icons that appear on the touch screen. Most of these icons are pictures of buttons.

2 CONSTRUCTION

2.1 Forecourt control unit DOMS PSS2000 (Figure 2)

The forecourt control units, the DOMS PSS2000, is housed in a metal rectangular box. It controls the interaction between the IRIDIUM POSs and the dispensers.

Internally, there are three main sub-assemblies: the power supply unit, the processor unit, and the interface boards. Interconnection between these units is via ribbon cables. There may be a number of interface boards depending on the number of dispensers connected to the system and whether a tank gauge is connected to it or not. The connections to the KCU, tank gauge and dispensers are made on the appropriate interface boards. The processor unit is a PROM/EPROM based unit and handles the control signal from the dispensers to the KCU. The sub-assemblies and interface boards are all mounted onto a DIN rail inside the housing. A mains supply is made to the unit via a fused assembly within the housing. The DOMS PSS2000 is powered through the main pump Emergency Stop button.

2.2 Point of sale PC, Epson M137A (Figures 3 and 4)

The point of sale PC is an EPSON IR POS with a 200 MHz Intel Pentium processor incorporating a colour touch screen panel, a built in receipt printer and a detachable customer display. The PC has either internal or any CE approved external speakers. The speakers provide audible warnings on the system condition.

The following components are identified as follows:

Manufacturer	Description	Part number
ASET	Mother board (bus type AT66)	2030002
BrainBoxes	AT RS 232 serial card	

2.2.1 Interactive touch-sensitive visual operator display.

The operator display is an LCD touch-sensitive display that is part of the EPSON IR POS. The screen has a matrix covering the screen that is sensitive to the touch of a finger and reacts to the icon selected. Only functions that are valid at a particular time will have icons on the screen. For example when in the middle of a sale it is not valid to shut down the POS, the shutdown icon will therefore not be shown as an option within special functions. These icons provide the following functions:-

Alphanumeric icons: For the input of various alphanumeric entries as required for point of sale transactions, such as sales amounts or car registrations.

Product/department icons: For the input of sales values against dry stock products that will increment the total value of the transaction.

Method of payment icons: These icons are used to offset the payment of the dry stock or wet stock sale against.

Special function icons: These icons are used to access specific tasks relating to the POS.

Pump control icons: For the control of the pump functions, including authorisation.

2.2.2 Barcode reader

Any CE approved barcode reader may be used.

2.2.3 Receipt printer

The receipt printer may be built into the IR POS or an alternative printer may be connected externally. If an external printer is connected a plastic cover is fitted over the empty recess for the built in printer. Both of these printers are powered from the EPSON IR POS

2.2.3.1 Epson TM88 (Figure 5)

This is a thermal printer for printing receipts.

2.2.3.2 Epson H5000 printer M128C (Figure 6)

This is a receipt and slip printer.

2.2.3.3 Epson H6000 printer M147A

This is a receipt and slip printer.

2.2.4 EFT card reader

The card reader is attached to the side of the operator display. This unit is for reading magnetically encoded credit and debit cards.

2.2.5 Cash drawer

This may be any CE marked simple cash drawer with a solenoid release. It is triggered from the back of the POS if an internal printer is used, or from the back of the external printer.

2.2.6 Customer display unit: Epson M58DA (Figure 8)

The customer display is normally attached to the Epson IR POS. The display has two rows each of twenty characters. The characters are 5 mm tall. The customer display may alternatively be attached to the Epson H5000 printer.

2.2.7 American power conversion uninterruptible power supply (Figure 7)

The UPS, which is a mandatory component of the system, provides mains power for the IRIDIUM system for up to 15 minutes after mains power failure. Connection is shown in Figure 1. The back office PC and its peripherals are not powered from the UPS. Any CE approved UPS in the APC range may be connected.

2.2.8 Modem

Connected to the POS may be either an internal or external, PSTN or ISDN modem. Any CE approved modem may be connected. The modem is used for on-line authorisation for credit and debit cards.

2.3 Back office PC

The back office is an IBM-compatible PC with a hard disk drive, a keyboard, mouse and a visual display unit. Any CE marked IBM-compatible PC may be connected.

2.3.1 Back office modem

Attached to the back office is a BT-approved modem. This is used for general external communications, on-line diagnostics, stock ordering and transmission of management information. Any BT-approved modem may be used.

2.3.2 Back office printer

The back office printer is used to print management reports and barcode labels. Any CE approved, compatible printer may be connected.

3 OPERATION

3.1 Control method

The dispensers are controlled by the DOMS PSS2000 FCU, which sends information to and receives information from the IRIDIUM system.

3.1.1 Monitoring the dispensers

The dispenser's status is displayed on the pump control icons in the top section of the operator display. A change in status is reflected within the icon and accompanied by an audible tone. A change of status of a pump, e.g. when it is authorised, shows on every POS.

3.1.2 Dispenser call

When a nozzle is removed from a dispenser the pump control icon will appear for that pump, and a pump call tone sounds. To authorise the dispenser the appropriate pump control icon is touched. The icon changes to reflect the fact that the command to start the pumps has been sent to the DOMS FCU. When the dispenser tells the DOMS FCU that fuelling is taking place the DOMS reports this to the POS and the pump icon changes to reflect the change of state. When the nozzle is returned to the dispenser the pump finished tone will sound and the pump button changes colour to denote a completed fuel sale. Whenever the cashier is required to take some course of action, such as authorising a pump, the pump icons flash.

3.1.3 Stopping the dispensers

To stop a single pump the appropriate pump control icon is selected and the stop icon is selected. If it is necessary to stop all of the pumps the "Stop All Pumps" icon is pressed.

NB: The section of the screen that deals with the dispensers, including the Stop All Pumps icon, is available at all times and is never covered by other screens.

3.2 Normal sales operation (primary and subsequent points of sale)

Sales operations are identical on all POSs.

3.2.1 Follow on transactions

When a nozzle is returned to the dispenser the pump finished tone will sound. If the nozzle is removed for a second purchase then, the dispenser may be authorised for the next transaction. Following completion of this transaction, and providing there is a stored transaction, the dispenser will not be able to be authorised until either the current or stored transactions are cleared through for payment.

3.2.1.1 Control of Stored Transactions

The Iridium POS can be configured to disable the stored transaction facility.

The **MaxTransAuth** parameter is used to control the authorisation of fuel sales for each of the dispensers (pumps). Access to amend this parameter is password protected.

There are 3 valid values for the **MaxTransAuth** parameter:

MaxTransAuth=2. This is the default value. An Iridium POS with pumps configured with a MaxTransAuth value of 2 enables that POS to authorize 2 fuel sales, allowing for a current and a stored transaction. If the pumps nozzle is lifted a third time the POS will display the words Call and Full on that pump icon, it cannot be authorised until either the current or stored transaction is paid off.

MaxTransAuth=1. An Iridium POS with pumps configured with a MaxTransAuth value of 1 allows the POS to authorize 1 fuel sale, disabling the stored transaction facility. After completion of the first sale if a pump nozzle is lifted the POS will display the words Call and Full on that pump icon, it cannot be authorised until the current transaction is paid off. With Iridium configured in this way the consumer would be able to fill up, be presented with a price to pay and in all circumstances be able to dispute the transaction and return to the pump to check the primary indication before completing the transaction.

MaxTransAuth=0. An Iridium POS with dispensers configured with a MaxTransAuth value of 0 prevents that POS from authorizing fuel sales. If the pump nozzle is lifted the POS will display the word Call, however the operator cannot authorize the pump.

3.2.2 Drive off alert

If a fuel sale is outstanding for longer than a pre-set time then the pump control icon will change colour and an outstanding fuel sale tone will sound.

3.2.3 Clearing for payment

Following a completed transaction the appropriate pump control icon is selected and a payment sub screen will appear. If two sales are present on the selected dispenser then both amounts will be shown. Pressing the appropriate icon will initiate a sales transaction and the amount to pay and any other required data, will be displayed on the customer display unit. The fuel transaction can be selected at any point of a sale's transaction, before a method of payment is selected, and it will be added to that transaction.

The operator agrees the transaction details with the customer. The transaction details are displayed simultaneously on both the operator monitor and the customer display. The customer display is the primary display.

If the customer disagrees with the transaction, then this is cleared by pressing the MODIFY icon then the VOID LINE, or VOID TRANSACTION, icon. An alternative transaction may then be selected by pressing the appropriate pump icon.

3.2.4 Multiple fuel transactions on one receipt

Further fuel transactions can be added to the sales transaction at any point, before the method of payment is selected, by following the procedure in Section 3.2.2.

3.2.5 Dry stock sales

Dry stock items are normally sold by swiping them using the barcode reader. For sales by value, or when a barcode cannot be read, the sale may be entered through one of the sale sub-screens that are accessed by pressing the "Sales" icon on the front screen.

3.3 Method of payment (all points of sale)

For any transaction where a split method of payment is allowed the operator will be asked to enter the amount of payment once a method of payment is selected. Receipt printing takes place after the cash drawer has been triggered.

3.3.1 Cash sales

Touching the cash or exact change icon on the visual display unit will complete the transaction and the cash drawer will open.

3.3.2 Cheque sales

Touching the payment and then the cheque icon on the visual display unit will allow the transaction to be completed and the cash drawer will open if required.

3.3.3 Manual credit card sales

The transaction can be completed by manual credit card by selecting the appropriate method of payment icons on the operator display. The POS is then freed for another transaction.

3.3.4 Automatic card sales

Swiping a magnetic card through the card reader can complete the transaction. The transaction is finalised when the printer has printed the card and sales details and when the operator has approved the customer's signature.

4 INTERLOCKS AND SECURITY FEATURES

4.1 UPS

In the event of any type of mains power failure the UPS will allow maintain the primary POS for at least 15 minutes.

4.2 Fuel price changes

The DOMS PSS2000 ensures that no price changes may occur on the dispenser at disallowed times.

4.3 Duplicate receipts

Any duplicate transaction receipts are clearly marked "DUPLICATE RECEIPT" near the top of the receipt.

4.4 Operating system security

The POS is PC based and runs the Windows operating system. The only exit from the programme to the operating system is through a password-protected icon within the "Functions" sub-menu. The password for this exit changes and is dependent on a pseudo-randomly generated three digit code and is reserved for use by an Engineer. The system is further protected by the Windows operating system registry being edited to prevent unauthorised access. The BIOS is password protected and is set so that the floppy drive is disabled.

4.5 Software version

The software version number of the IPC (integrated pump controller) is 1.00a and is displayed during the start up process. The “a” denotes the cosmetic change to show the fuelling data which is shown in Figure 9. This version number relates to all pump control functions and any other parts of the system that is the subject of this certificate. Included within this are the format of the fuel information on the customer display and the relevant sections of the printed receipt.

5 AUTHORISED ALTERNATIVES

5.1 Alternative PC based POS

The existing POS PC and associated operator display and customer display unit may be replaced with any POS described in section 5.1.1 and 5.1.2. Peripheral equipment is connected as described in the certificate.

5.1.1 TEC 5600 (Figure 11)

The TEC5600 POS comprises of a PC having connected to it an LCD touch screen operator display with a built-in card swipe and a customer display unit. There are two versions of PC case, one having two expansion slots, the other having four (Figure 12). The POS may contain the following additional cards:

Manufacturer	Description	Type
Creative Labs	Sound card	Soundblaster PCI
Brain Boxes	Serial card	Brain Boxes PCI

The equipment is identified as follows:

Equipment	Manufacturer	Model No
TEC 5600 PC (2 expansion slots)	Toshiba TEC	ST-5601-B2nnn-nn (n may be any character)
Mother board	Toshiba TEC	LAJB00299xx
Power supply	Toshiba TEC	API-4085
TEC 5600 PC (4 expansion slots)	Toshiba TEC	ST-5601-B24C2
Mother board	Toshiba TEC	LAJB00299xx
Power supply	Toshiba TEC	API-4085 / GDB-0097002
Customer display	TEC	LIUST 51
Operator display	TEC	TSTS-56-T-1V

5.1.2 Epson IM-310 Model no. M156A (Figure 13)

The point of sale PC incorporates a colour touch screen panel, a detachable customer display unit and a built in receipt printer. A card swipe (Model no.: DM-MR123) may be incorporated into the touch screen panel. A protective plastic cover is fitted on the rear of the unit covering the external connection ports and must not be removed during normal use. The POS may contain the following additional cards:

Manufacturer	Description	Type
Creative Labs	Sound card	Soundblaster PCI
Brain Boxes	Serial card	Brain Boxes PCI

NOTE: The serial connection to the DOMS forecourt control unit may only be to one of the four ports shown in Figure 14.

The equipment is identified as follows:

Equipment	Manufacturer	Model No
Epson IM-310 POS PC	Epson	M156A
Mother board	Epson	IM-310 MAIN 2034124-01 / 2034698-01
Power supply	Epson	APS-138 / 68-1320-91
Customer display	Epson	M58DA

5.2 Dione Xchequer EFT payment and loyalty terminal

As described in the certificate but having the Dione Xchequer EFT payment and loyalty terminal (Figure 15) connected to an RS232 port on the Iridium combined KCU/POS or POS.

5.3 Alternative forecourt controller DOMS PSS 5000

As described in the certificate but having the DOMS PSS 5000 forecourt controller which is a direct replacement for the DOMS PSS 2000.

5.3.1 Construction

The DOMS PSS5000 forecourt controller comprises a metal rectangular box (Figure 16) housing the following main components. The general arrangement is shown in Figure 17.

- A power supply
- A central processing board (CPU) with 8 serial ports (CPB508).
- This has an LCD 16x2 character alphanumeric display and a keyboard comprising 5 keys for navigating the menu options, an adjacent legend describes the key functions as shown in Figure 18.
- Hardware interface modules. Dispensers are connected to the CPU board via an appropriate hardware interface module compatible with the communication protocol of the dispenser.

5.3.2 Software

The DOMS PSS5000 has a legal authority module (LAM) for the UK containing specific parameter values and functions. The LAM version number is 498-06-100 / 101 and the checksum number is 0D6C or 084C. These can be viewed by selecting the appropriate menu heading using the operator keys on the CPU.

5.3.3 Operation

The operation of the Iridium forecourt control system remains the same. The LAM version number and checksum are accessed as follows.

When the PSS is powered on, the first line displays the application software version and the current time. The second line displays the W&M Service menu. Pressing the down arrow once, displays the W & M menu which comprises 7 sub-menus, W.1 to W.7. Press the right button once to obtain W.1 – LAM INFO and press again to display Version and Checksum information.

5.3.4 DOMS 5000 SITE CONTROLLER with LAN (Ethernet) connectivity

As described in the certification but having connected the DOMS 5000 site controller with provision of LAN (Ethernet) connectivity. Implementation of this connectivity is achieved by the following options:

- (a) Use of separate Ethernet add-on module (ADT458). This version is designated CPB508.
- (b) By fitting revised main board incorporating the Ethernet circuitry. This version is designated CPB509.

5.3.5 DOMS PSS5000 Compact site controller

As described in section 5.3, but in a more compact metal box, with less spaces for hardware interface modules. (Figure 46).

5.4 Weighing instrument

Any weighing instrument having a test certificate in accordance with The Council Directive 90/384/EEC on Non-Automatic Weighing Instruments may be connected to the store controller serial port, typically COM 5. The software controlling the operation of the weighing instrument is described in NWML Test Certificate GB-1156.

5.5 Alternative POS PC - Epson IR-320/IM-320 Model no. M156X (Figure 19)

The existing POS PC and associated operator display and customer display unit may be replaced with the Epson IR-320/IM-320 POS PC.

A protective plastic cover is fitted on the rear of the unit covering the external connection ports and must not be removed during normal use. The POS may contain the following additional cards:

Manufacturer	Description
Brain Boxes	RS 232 Serial card

NOTE: The connection to the DOMS forecourt control unit may only be to one of the four standard serial ports grouped together at the rear of the unit.

The equipment is identified as follows:

Equipment	Manufacturer	Model No
Epson IR-320/IM-320 POS PC Mother board Power supply	Epson Epson Epson	M156X 2084077-00 P-310C
Customer display	Epson	M58DB

5.6 Alternative POS PC - Epson IM-800 Model no. M183A

The existing POS PC and associated operator display and customer display unit may be replaced with the Epson IM 800 POS PC (Figure 20).

A protective plastic cover is fitted on the rear of the unit covering the external connection ports and must not be removed during normal use.

The equipment is identified as follows:

- Epson IM-800 PC unit, model number M183A
- Epson DM-M820-024 touch screen panel with card swipe, model number S1201D.
- Epson DM-110 customer display units (CDUs): M580B or M129C
- Note: Any suitable CE marked CDUs may be used.

5.6.1 Alternative PSU with 24 V dc output

Having fitted an alternative power supply unit (PSU) providing a 24 Vdc output suitable for supplying printers and/or till units, or any device requiring 24 Vdc.

The modified power supply unit has the part number Delta Electronics INC DPS-180MB-2 XX (where XX=0-9, A-Z or blank). A view of the back panel (cover shown removed) is shown in Figure 21 to this amendment.

5.7 Iridium operating as kiosk control unit

As described in the certificate, but having the option of setting-up the Iridium to operate as a fuel kiosk control unit with completed fuel transactions being electronically transferred to any CE marked third party POS system.

As described in the certificate, but having the option of setting-up the Iridium unit operate as a kiosk control unit, with completed fuel transactions being electronically transferred to any CE marked third party POS system.

The changes required do not affect the metrology software issues status which therefore remains as stated in the certificate.

Where the Iridium connects to a POS system with authorisation to connect to Weighing Instruments, the following shall apply:

Any weighing instrument having a type approval certificate in accordance with The Council Directive 90/384/EEC on Non-Automatic Weighing Instruments may be connected to the serial port of the third party POS equipment. The software controlling the operation of the weighing instrument shall be as described in the applicable NWML Test Certification.

5.8 Alternative site controller Torex Retail 9730

As described in the certificate, but having the option of using the Torex Retail 9730 site controller described in 2780 Supplement 7.

5.9 IBM surePOS 563 electronic till with Arciris 'Iridium' fuel POS solution

As described in the certificate, but having connected the IBM surePOS 563 electronic till. This equipment is detailed below and views are shown in Figures 22, 23, and 24.

The changes required do not affect the metrology software issues status which therefore remains as stated in the certificate.

5.9.1 Operation with weighing instruments

Where the Iridium connects to a POS system with authorisation to connect to weighing instruments, the following shall apply:

Any weighing instrument having a type approval certificate in accordance with The Council Directive 90/384/EEC on Non Automatic Weighing Instruments may be connected to a suitable port on the IBM surePOS 563. The software controlling the operation of the weighing instrument shall be as described in the applicable NWML Test Certification.

5.9.2 IBM SUREPOS 563

The IBM SUREPOS 563 is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe. An integrated customer display unit (CDU) is mounted high on the rear of the unit.

The equipment is identified as follows:

Equipment	Manufacturer	Model No
IBM surePOS 563	IBM	IBM SurePOS 500 Series (4840) Model 563

5.10 Alternative POS PC - Hewlett Packard RP 5000 POS PC (Figure 25)

A point of sale PC incorporating an LCD colour touch screen panel, a customer display and a separate receipt printer.

5.11 Alternative POS PC: Epson IR 700 / IM 700

As described in the certification, but having the option to use the Epson IR 700 / IM 700 POS unit as described below and as shown in Figures 26 and 27.

A POS system comprising:

- Epson IR 700 / IM 700 PC unit, model number M215A
- Epson DM-LX121SV touch screen panel model number M217A.
- Epson 3 track magnetic stripe reader (MSR).
- Epson DM-D210 Customer Display Units (CDUs): M59DB
- Note: Any suitable CE marked CDUs may be used.
- Epson printer TM-T88IIIX, model M216A
- Note: Any suitable CE marked serial port printer may be used.

5.12 Alternative POS PC: Fujitsu team POS 2000-M

As described in the certificate, but having connected the Fujitsu team POS 2000-M electronic till. This equipment is detailed below and views are shown in Figures 28, 29, and 30, of this amendment.

The changes required do not affect the metrology software issues status which therefore remains as stated in the certificate.

5.12.1 Operation with weighing instruments

Where the Iridium connects to a POS system with authorisation to connect to weighing instruments, the following shall apply:

Any weighing instrument having a type approval certificate in accordance with The Council Directive 90/384/EEC on Non Automatic Weighing Instruments may be connected to a suitable port on the Fujitsu team POS 2000-M. The software controlling the operation of the weighing instrument shall be as described in the applicable NWML Test Certification.

5.12.2 Fujitsu team POS 2000-M

The Fujitsu team POS 2000-M is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe. An integrated customer display unit (CDU) is mounted high on the rear of the unit.

The equipment is identified as follows:

Equipment	Manufacturer	Model No
Fujitsu team POS 2000-M	Fujitsu	TP2000M

5.12.3 Serial port assignments (see Figure 30)

COM 1	-	Touch screen
COM 2	-	DOMS
COM 3	-	Receipt printer (powered port)
COM 4	-	OLA
COM 5	-	Scales
COM 6	-	Customer display (powered port)
COM 7	-	Not used (powered port)
COM 8	-	Chip and pin

- COM 9 - Not used (powered port)
- COM 10 - Not used (powered port/cash drawer)
- COM 11 - Codax
- COM 12 - Loyalty
- COM 11 & 12 - provided by BrainBoxes PCI expansion card

5.12.4 Interfaces

The following ports of the POS terminal may be used:

- | | | | |
|---------|------|---------|-----------|
| RS323 | PS/2 | LCD | LCD Power |
| Network | USB | Speaker | CRT |

5.13 Alternative POS PC: Toshiba TEC ST-6501-C74C2-QM

As described in the certificate but having the alternative PC as detailed below. Views are shown in Figures 31, 32, and 33, of this amendment.

The changes required do not affect the metrology software issues status, which therefore remains as stated in the certificate.

5.13.1 Operation with weighing instruments

Where the Iridium connects to a POS system with authorisation to connect to weighing instruments, the following shall apply:

Any weighing instrument having a type approval certificate in accordance with The Council Directive 90/384/EEC on Non Automatic Weighing Instruments may be connected to a suitable port on the Toshiba TEC ST-6501. The software controlling the operation of the weighing instrument shall be as described in the applicable NWML Test Certification.

5.13.2 Toshiba TEC ST-6501

The Toshiba TEC ST-6501 is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe.

The equipment is identified as follows:

Equipment	Manufacturer	Model No
Toshiba TEC ST-6501	Toshiba TEC	ST-6501

5.13.3 Serial port assignments (see Figure 33)

- COM 1 - Online authorisation
- COM 2 - Used internally for touch screen
- COM 3 - Customer display
- COM 4 - Receipt printer (cash drawer)
- COM 5 - DOMS
- COM 6 - (USB to serial adapter) chip and pin

5.14 Alternative POS PC: Galeo manufactured by AURES Technologies Ltd

As described in the certificate but having the alternative POS PC designated Galeo manufactured by AURES Technologies Ltd.

This is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe as shown in Figures 34, 35 and 36.

5.14.1 Approved serial ports (Figure 36)

The 4 x RS232 ports are designated for use for connections as shown in System schematic (Figure 1).

The remaining ports may be used for suitable non-metrological peripheral equipment.

5.15 Alternative POS PC: Odysse manufactured by AURES Technologies Ltd

As described in the certificate but having the alternative POS PC designated Odysse manufactured by AURES Technologies Ltd.

This is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe as shown in Figures 37, 38 and 39.

5.15.1 Approved serial ports (Figure 39)

The 4 x RS232 ports are designated for use for connections as shown in System schematic (Figure 1).

The remaining ports may be used for suitable non-metrological peripheral equipment.

5.16 Alternative POS PC: Xn905 manufactured by Xn Checkout Ltd

As described in the certificate but having the alternative POS PC designated Xn905 manufactured by Xn Checkout Ltd.

This is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe as shown in Figures 40, 41 and 42.

5.16.1 Approved serial ports (Figure 42)

The 3 x RS232 ports are designated for use for connections as shown in System schematic (Figure 1).

The remaining ports may be used for suitable non-metrological peripheral equipment.

5.17 Alternative POS PC: Hewlett Packard RP5700

This is a point of sale PC supplied with a 15" or 17" Touch screen.

5.18 Alternative POS PC: ELO Model 15D1

This is a PC based electronic till having an LCD touch screen operator display with a built-in card swipe and intergrated customer display.

5.19 Alternative POS PCs: Toshiba models ST-A10 and ST-A20

These are PC based electronic tills having an LCD touch screen operator display with a built-in card swipe.

5.20 SPOT OPT (Outdoor Payment Terminal)

5.20.1 Terminal Construction

The Secure Payment Outdoor Terminal (SPOT) has two basic component architectures.

The M3 SPOT terminal is a development of the M2 SPOT terminal, the major change being separation of the secure pin pad from the display. These are now two physically separate units connected via secure encrypted communication channel.

The payment terminal accepts bank and fuel cards. The payment terminal has alternatives described below and is dependent upon a separate forecourt control system for all sequencing and transaction data.

As an alternative to mounting the SPOT into the dispenser (CRIND), it can be mounted independently on a pedestal to controller customer selected pump.

The components used in the SPOT OPT configuration are the same as used for the SPOT M3 CRIND configuration.

The SPOT OPT operates as the CRIND, but with the added functionality which allows the customer to select which fuelling point the transaction is to be made from.

The SPOT can be packaged in a number of different pumps (CRIND) or in a number of different pedestal configurations (OPT) as shown in Figures 17, 18, 19,53 & 54.

5.20.1.1 RFID interface

This is an optional I/O device with RF transponder for use with TAG devices of the Radio Frequency Identification Device (RFID) type. This is typically the Texas Instruments key fob device. Where installed, the SPOT-CRIND/OPT collects the TAG number and passes it to the host POS using the same software and hardware systems used for cards.

5.20.1.2 Contactless cards

This is an optional card interface that communicates to contactless chip cards. Where installed, the SPOT-CRIND/OPT collects the card information and processes it in an identical manner to that used in the contact card interface.

5.20.1.3 Transaction log

The Transactions are stored in the main SQL database which normally resides on the Back Office PC, The Database is not accessible to operators or site staff. It is only accessible to engineers via a utility program. The correct username and password is required to gain access to the transactions stored on the Database.

For the Site management to view the transactions and print Duplicate receipts the back Office PC has a program called SMS (Store Management System) this also requires a user name and password to access the SMS system. OPT / CRIND receipts can also be printed from any of the POS units on site.

5.20.1.4 Electronic Journal

As above, the transactions are stored in an electronic format (SQL Database) therefore there is no Journal printer.

5.20.2 Interlocks and Security Features

5.20.2.1 Paper insufficient to print receipt

The SPOT CRIND/OPT terminal printer detects when the printer paper is low and displays a message warning:

Day Mode: Receipts available from Kiosk

Night Mode: Out of Service

Alternatively, the system can be configured to prevent any new CRIND/OPT transactions starting once paper low has been detected.

The SPOT CRIND/OPT can be configured to print receipts automatically or on demand

5.20.2.2 Printer fault

If the terminal identifies a printer fault, a message states that the receipt is unavailable but gives the customer the choice to proceed with transaction.

5.20.2.3 Power Loss

In the event of a power failure in unmanned configuration, the transaction details are memorised and completed when the power is restored.

5.20.2.4 Duplicate receipts

Duplicate receipts can be obtained from the Kiosk (POS). If in night mode, receipts can still be obtained on another day i.e. next day.

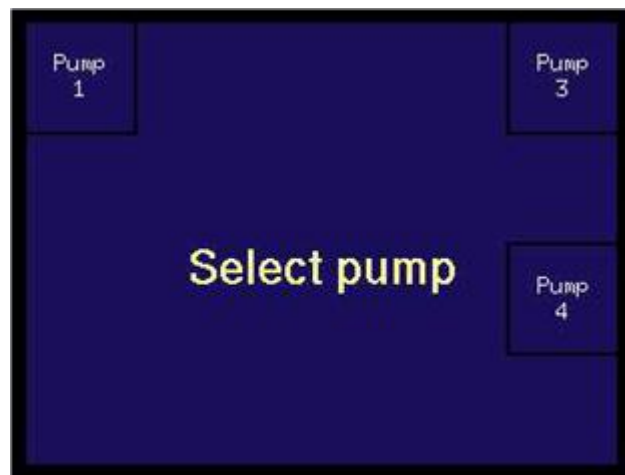
5.20.3 Printed information

The following information is printed.

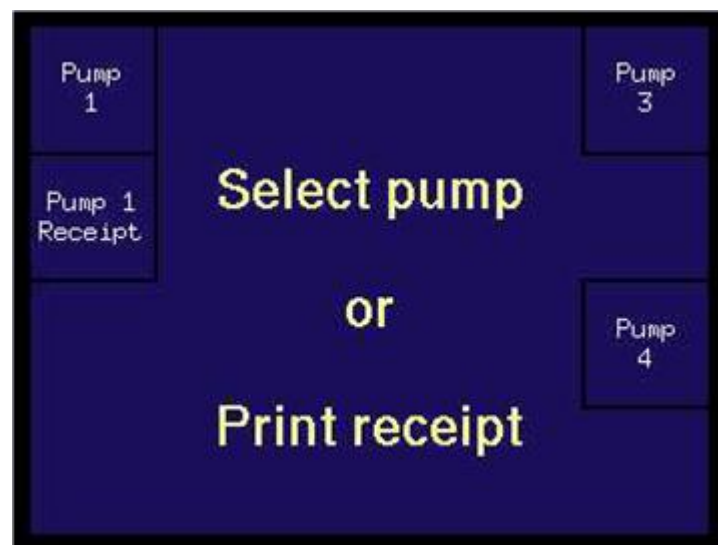
Receipt:	Address of the station
	Receipt number
	Date and Time
	Transaction volume, price to pay and pump number
	A second section will contain the VAT element of the sale.

5.20.4 OPT Operation

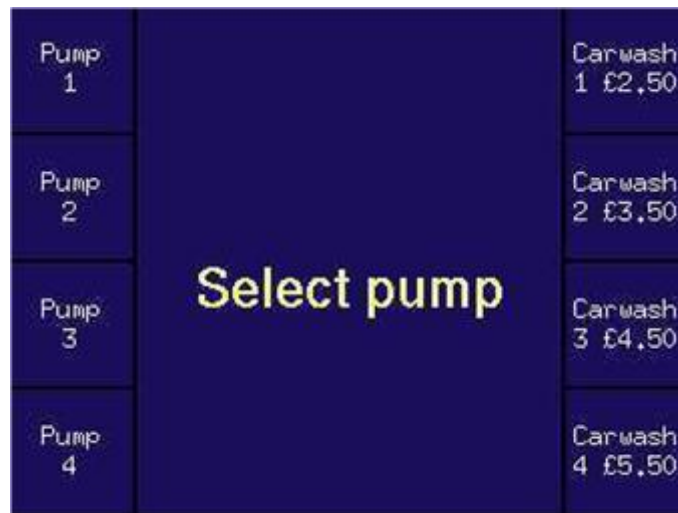
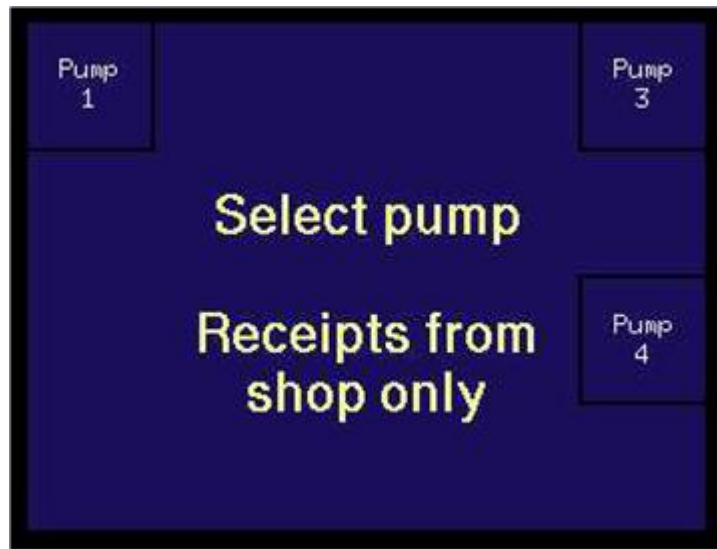
- Customer pulls up next to a pump, then goes to the OPT and selects the Pump that they are on.



- They would then be requested to enter their card.
- Once the card has been verified they will be requested to enter their PIN.
- The system will then go on line for authorisation for the Credit Card.
- If the card has been authorised the customer will be asked to returned to the pump and begin fuelling. The system will also show them the maximum amount that they can dispense.
- When the customer has filled up to the required amount or to the amount of the maximum fill limit, (cash limit is set by the acquirer) they can then return to the OPT to retrieve their receipt.



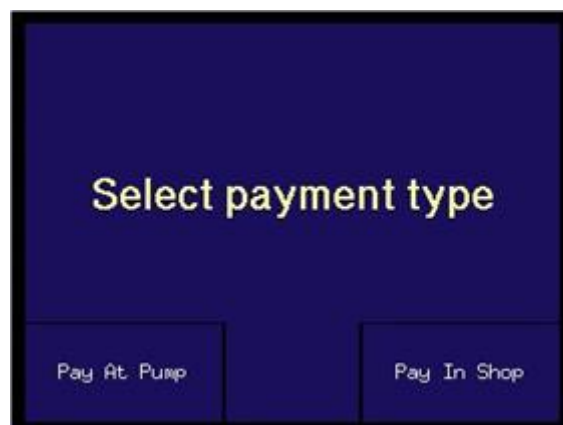
- In day mode, if the receipt printer cannot produce a receipt then the customer will see the following screen informing them that a receipt can be obtained at the shop



- Other screens that may be seen will allow the customer to buy a car wash via the OPT, this will include on his receipt the action code for the car wash. The customer can then enter this code into the car wash to activate the wash program selected.

5.20.5 CRIND Operation

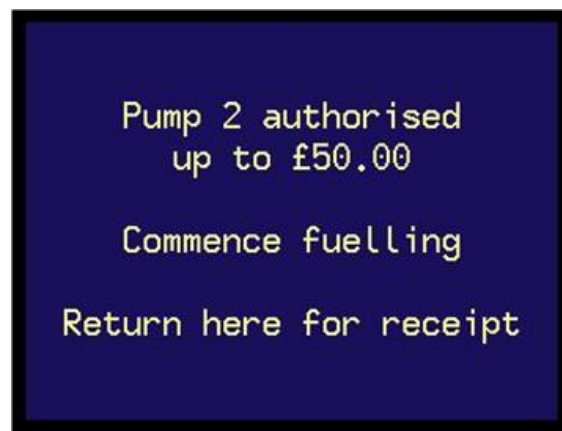
- When the customer uses the pump they will see the following screen and will be required to either select Pay at pump or in the shop. They will also be able to just lift the nozzle to pay in the shop.



- If receipts are not available then this screen will be displayed at the start of the transaction.



- Screen below confirms to the customer that they are authorised to begin fuelling.



5.21 Torex Forecourt Link and Forecourt Interface Box

5.21.1 Introduction

As described in the descriptive annex but having the software installed on the POS and the pump interface cards in a smaller box utilising the same hardware.

5.21.2 Construction

Figure 47 shows a schematic of the Torex Forecourt Link (TFL) and Forecourt Interface Box in a typical forecourt application. The (TFL) manages all the communication between the dispensers and the 3rd party POS ensuring the integrity of the dispenser transactions (volume and price data).

The Forecourt Interface Box (Figure 48) consists of following parts:

- Control board
- Interface card rack to hold the interface cards
- Different types of interface cards to communicate with the dispensers
- Serial backplane
- Power supply
- Metal box (usually black)

5.21.3 Main sub-assemblies

5.21.3.1 Pump Interface Cards

The Dispenser Specific Interface Card(s) (Figures 50 and 51) installed in the Interface Rack (Figure 49) handle communication between the (TFL) and the dispensers on the forecourt. The Control-board handles the communication between the system Software (TFL) and PumpLink Interface Box. The communications between the interface cards and the Control board over the I²C-bus are CRC-protected.

5.21.3.2 Lon Interface

The Lon interface connects the TFI to the IFSF network. The connection can be by either a USB LON adaptor or a LON PCI card. Utilising these type of boards the system allows for both IFSF and non IFSF pumps to be used on the same system (IFSF via the Lon card and the other pumps via the individual interface cards on the I²C network).

5.21.3.3 Interface card rack

The interface card rack holds the interface cards. The rack is powered by the 'EMC 40or ASM40' power supply. The dispensers are linked to the interface cards using the connectors provided on the Interface rack board. The interface cards in the interface card rack communicate with the Control Board over the I²C-bus.

5.21.3.4 Interface cards

The interface cards enable the (TFL) to communicate with particular dispenser types. There is a specific Torex interface card for each dispenser type.

Interface cards will be either EPROM based or a programmable flash micro-controller that contains the dispenser-specific protocol. Most of the interface cards can communicate with 4 dispensers, but some versions can communicate with 8 dispensers.

The LEDs on the interface card give information about the status of the card and the communication between (TFL) and dispenser. The red LED indicates communication from the (TFL) towards the dispenser. The green LED indicates communication from the dispenser towards the (TFI). The yellow (heartbeat) LED indicates the application is running and communication via the I²C network with the main system.

A Bank Note Acceptor (BNA), or an Outdoor Payment Terminal (OPT), or a price sign may be connected to the (TFL) using the appropriate interface cards.

5.21.4 Mechanical

The Forecourt Interface Box is encased in a Torex custom-made metal enclosure as shown in Figure 49. Removing the lid allows access to all sub-assemblies (see Figure 48).

5.21.4.1 Housing

The Forecourt Interface Box is installed in a (normally black) metal enclosure. The lid is secured using 4 machine screws. The lid is made from Perspex permitting viewing of the LED's on the interface cards in the rack (Figure 49). The box is grounded via the power supply connection.

5.21.5 Electrical and Electronics

5.21.5.1 Electrical

Power for the (TFL) is provided by the ECM 40 or ASM 40 power supply. The power supply output delivers 9V DC to the Forecourt Interface Box control / PSU board. The Forecourt Interface Box uses a maximum of 40 Watt.

5.21.5.2 Electronics

The electronic hardware contained in the Forecourt Interface Box is listed below.

1	x	Control / PSU board
1	x	Torex interface card rack
1-8	x	Torex interface cards
1	x	ECM 40 or ASM 40 power supply
1	x	Serial Backplane
1	x	Powered Serial 9 way
2	x	Serial 9 way
1	x	26 Way I/O Port

5.22 Alternative OPTS

Having the alternative OPT systems connected to the system:

- Tokheim Fuel-POS - Parts Certificate TC8099 or Evaluation Certificate TC7346
- Wayne Fusion - Evaluation Certificate No. 10 70 24
- Mobile Payment via mobile phone app, Utilising the same OPT server unit as normal OPTs

6 CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
Certification No 1828/28	29 th April 1999	Type examination certificate first issued.
Certification No 1918/49	29 th April 1999	Type examination certificate first issued.
Certification No 1940/44	29 th April 1999	Type examination certificate first issued.
Certification No 1958/44	29 th April 1999	Type examination certificate first issued.
Certification No 1967/60	6 th November 2003	Type examination certificate first issued.
Certification No 2017/48	29 th April 1999	Type examination certificate first issued.
Certification No 2162/50	29 th April 1999	Type examination certificate first issued.
Certification No 2176/42	29 th April 1999	Type examination certificate first issued.
Certification No 2223/17	29 th April 1999	Type examination certificate first issued.
Certification No 2286/30	29 th April 1999	Type examination certificate first issued.
Certification No 2437/19	29 th April 1999	Type examination certificate first issued.
Certification No 2486/18	29 th April 1999	Type examination certificate first issued.
Certification No 2536/26	7 th April 2000	Type examination certificate first issued.
Certification No 2619/26	21 st November 2001	Type examination certificate first issued.
Certification No 2650/18	31 st December 2002	Type examination certificate first issued.
<u>Series V004</u> Revision 1 of certificates above	9 th December 2008	- Amendments and variants consolidated into one document.
<u>Series V004 Revision 1</u> Revision 2 of valid certificates above	9 th December 2008	- Addition of alternative PC's sections 5.14, 5.15 and 5.16

<u>Series V004 Revision 2</u> Revision 3 of valid certificates above	23 rd September 2009	- Addition of section 3.2.1.1, Control of stored transaction mode - Addition of alternative PC section 5.17
<u>Series V004 Revision 3</u> Revision 4 of valid certificates above	1 st February 2010	- Addition of alternative PCs sections 5.18 & 5.19
<u>Series V004 Revision 4</u> Revision 5 of valid certificates above	14 th May 2010	- Submitter address updated on front page - 5.20 Addition of SPOT M3 OPT
<u>Series V004 Revision 5</u> Revision 6 of valid certificates above	17 June 2011	Addition of section 5.3 DOMS PSS5000 Compact site controller Addition of section 5.21 Torex Forecourt Link Addition of Figure 53 Gilbarco SPOT M3 Housing
<u>V004 Revision 6</u> Revision 7 of certificates above	12 April 2013	Front Page Torex changed to MICROS. Figure 54 added and referenced in section 5.20
<u>V004 Revision 7</u> Revision 8 of certificates above	19 September 2013	Section 5.5 “IM-320” added as an alternative name for the “IR-320”
<u>V004 Revision 8</u> Revision 9 of certificates above	November 2013	Application by Tokheim UK, Front page expiry date of dispenser 2286 updated based on expiry date of 2286/58
<u>V004 Revision 9</u> Revision 10 of certificates above	29 September 2014	Section 5.22 Alternative OPTS added
<u>V004 Revision 10</u> Revision 11 of certificates above	25 February 2015	Front page certificate expiry dates updated Section 5.22 Mobile phone payment option added

Note: Expired certificates are included for completeness. Revisions made after the expiry date only apply to valid certificates.

For clarity the POS peripherals have been excluded.
Other POSs may be connected in the same manner.

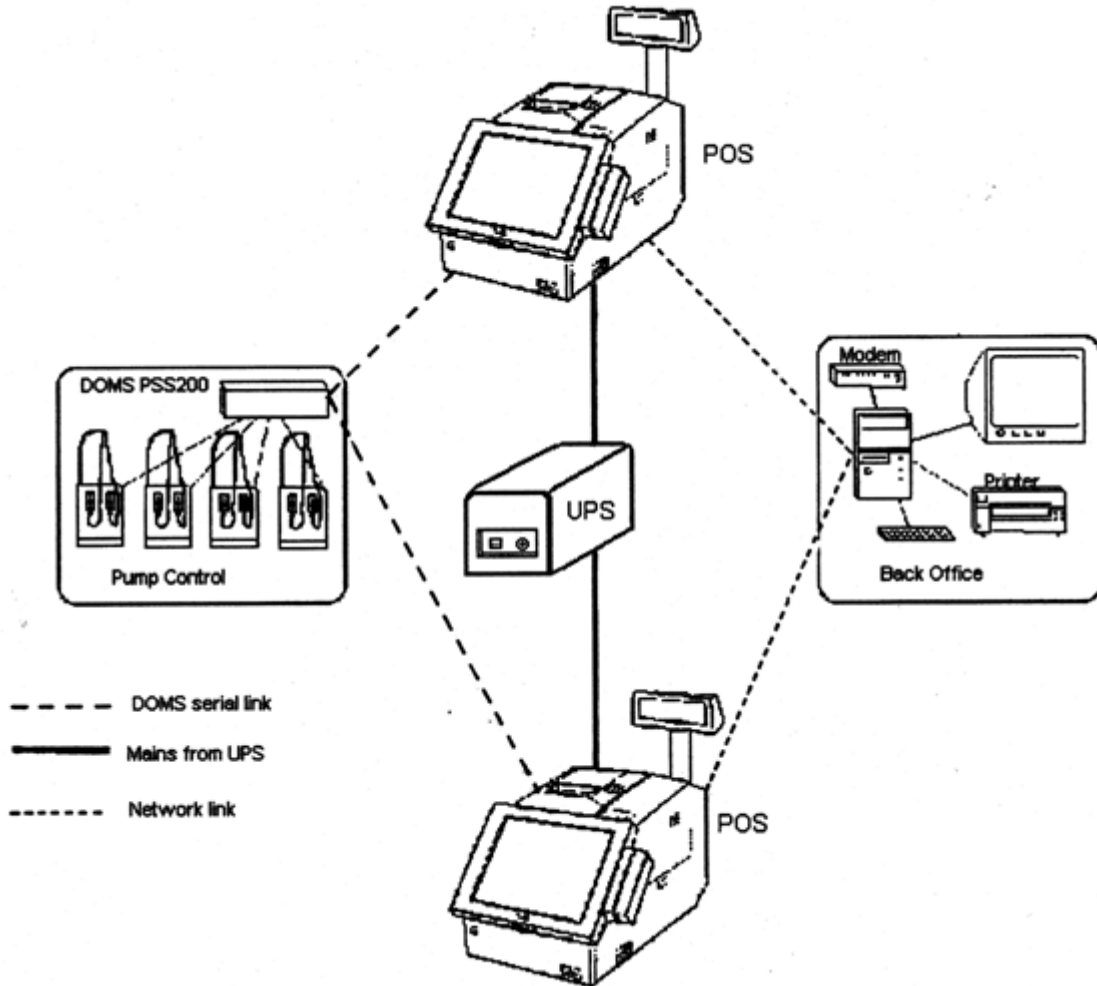


Figure 1 System schematic

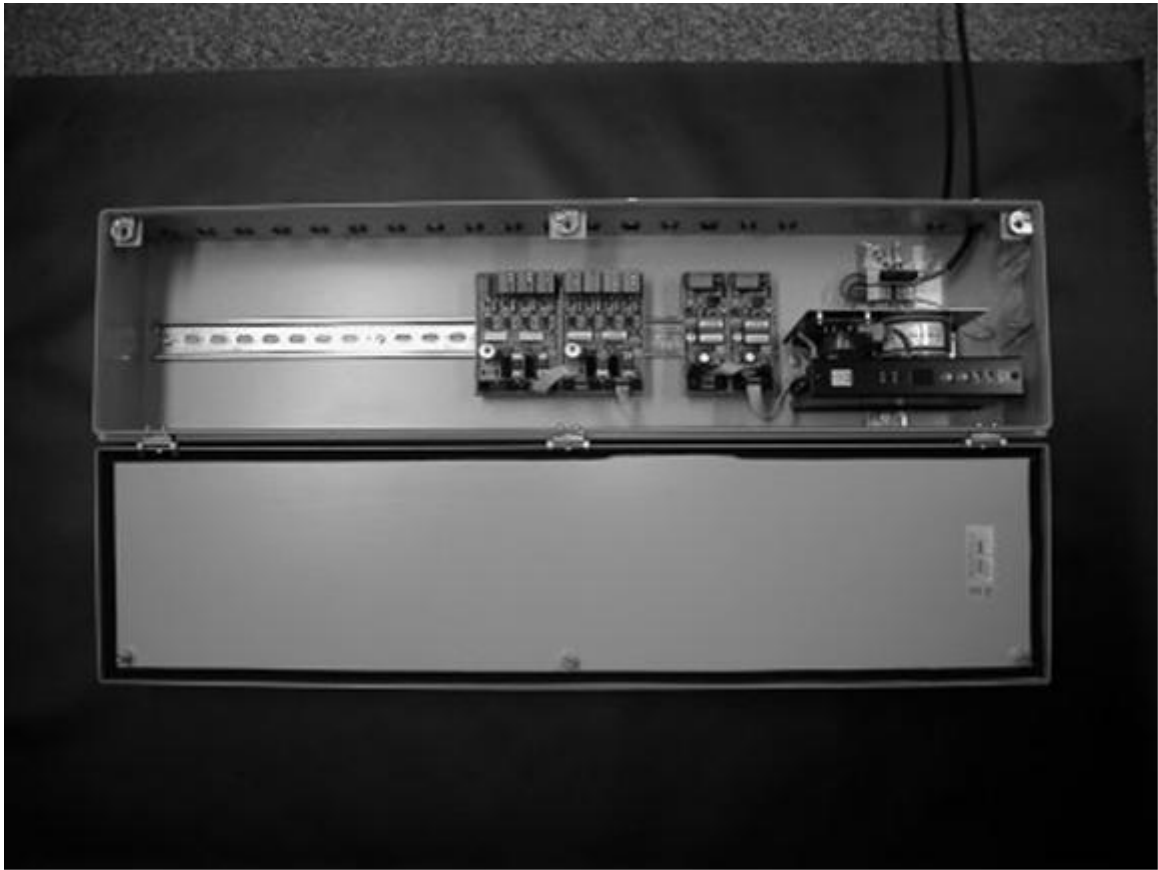


Figure 2 **DOMS PSS200 forecourt control unit**



Figure 3
Epson M137A point of sale PC with built-in printer and customer display unit



Figure 4 Epson M137A point of sale PC without printer

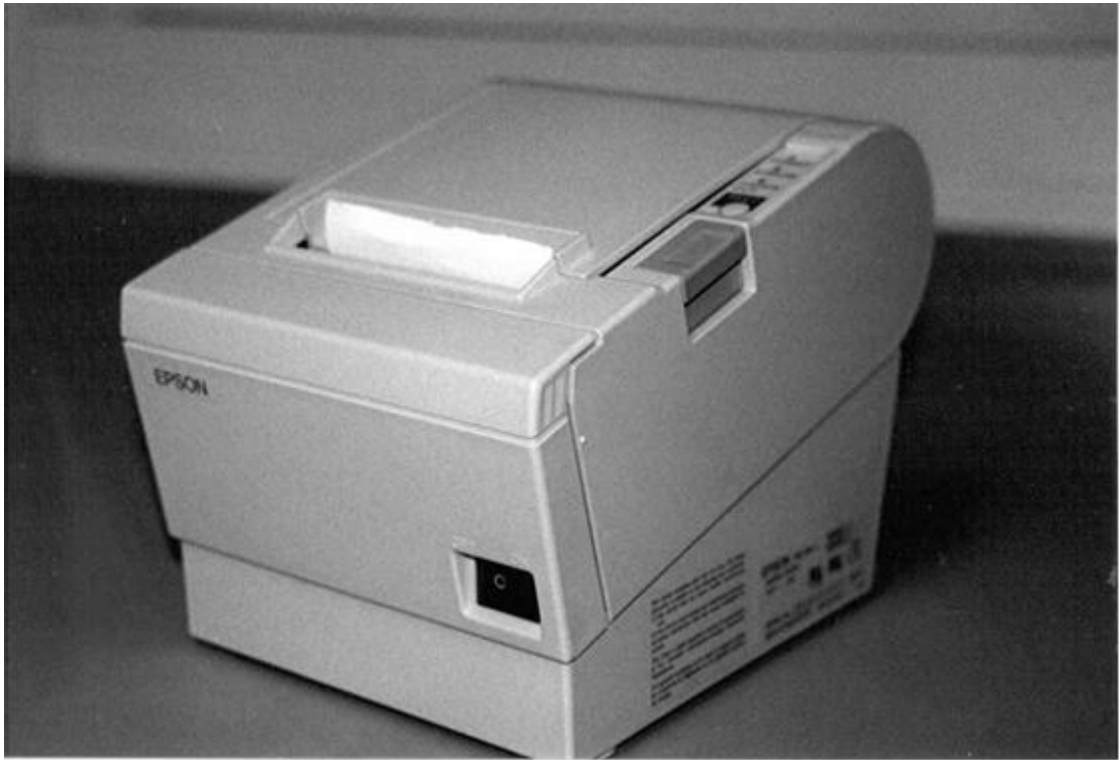


Figure 5 Epson TM88 receipt printer



Figure 6 Epson H5000 receipt printer (incorporating customer display unit)



Figure 7 **Uninterruptible power supply**



Figure 8 **Customer display unit showing information layout**

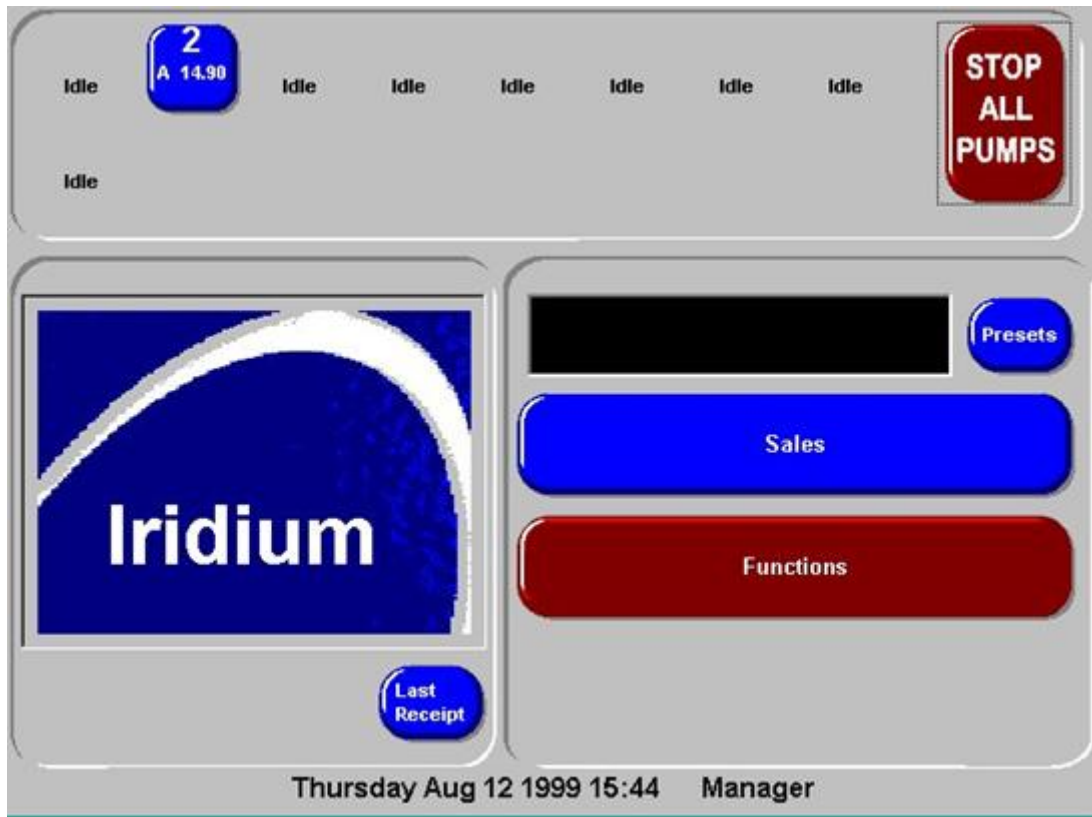


Figure 9 Typical operator display screen layout



Figure 10 Typical customer receipts



Figure 11 TEC 5600 POS system (PC with 2 expansion slots)



Figure 12 TEC 5600 PC with 4 expansion slots



Figure 13 Epson IM-310 POS



Figure 14 Rear of Epson IM-310 showing serial ports for connection to the DOMS



Figure 15 Dione Xchequer EFT payment and loyalty terminal

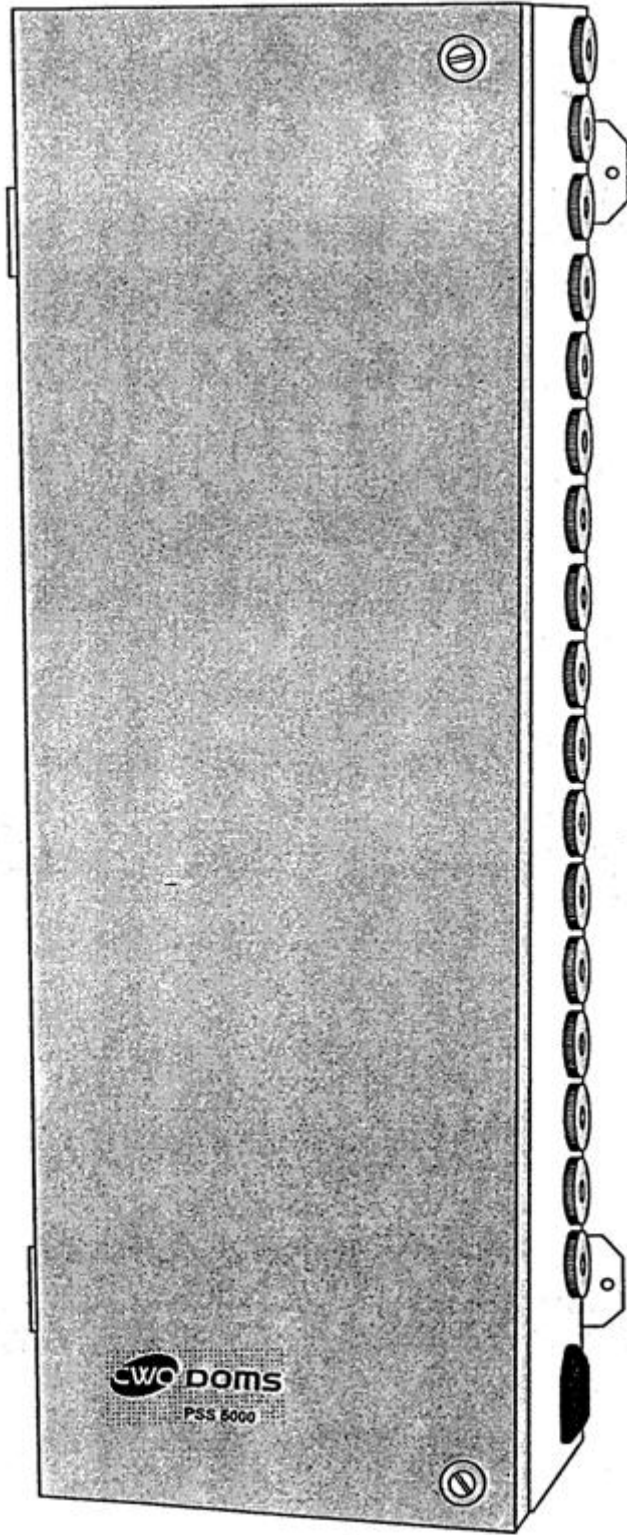


Figure 16 DOMS PSS 5000 enclosure

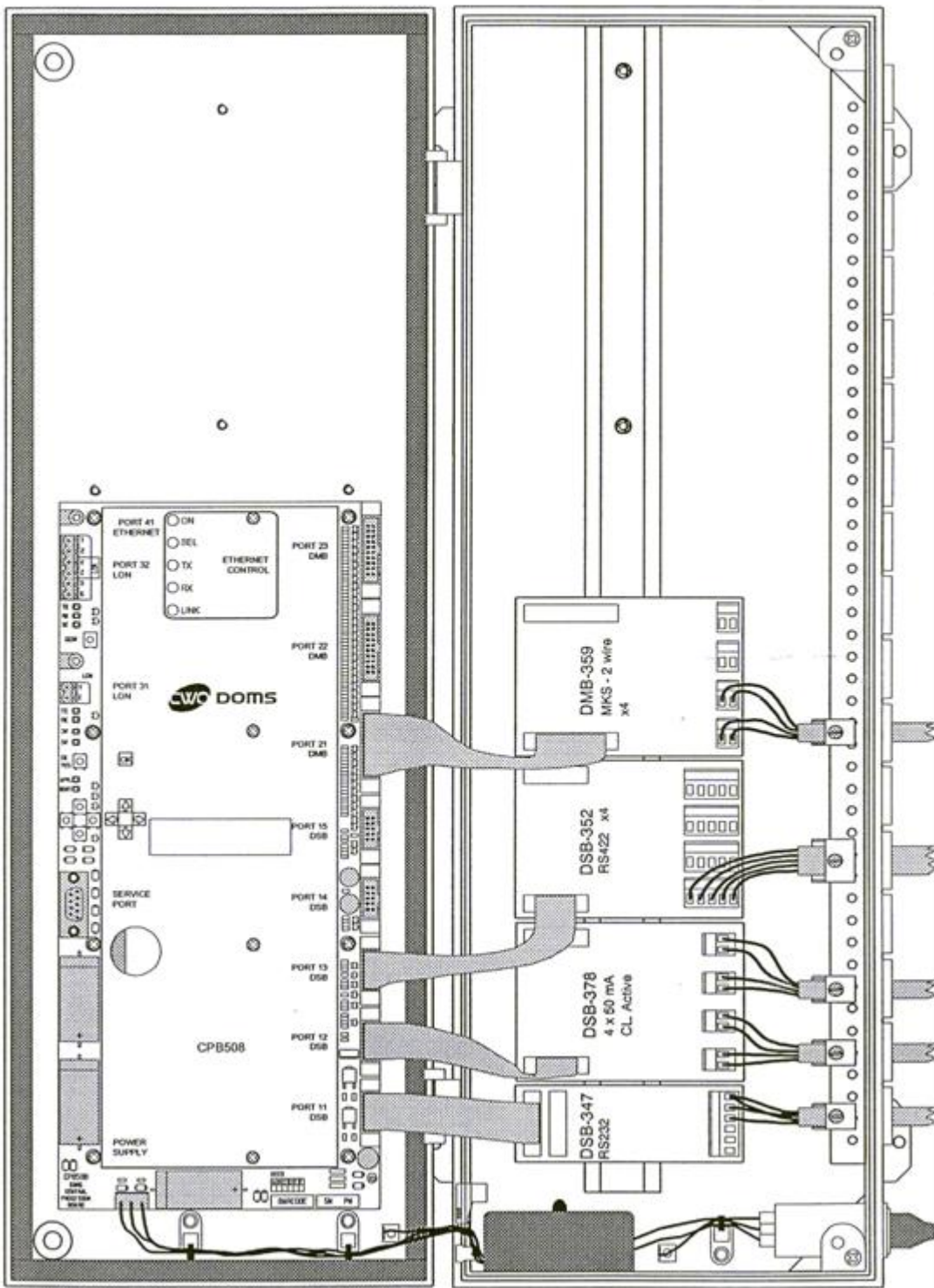


Figure 17 DOMS PSS 5000 typical electronic component layout



Figure 18 Central processing board (CPB508) display and menu navigation keys



Figure 19 Epson IR-320 Model no. M156X



Figure 20 Rear of Epson IR-800 Model no. M183A with cover removed



Figure 21 View of back panel – cover removed - showing 24 V outlet



Figure 22
IBM surePOS 563,
showing integrated card swipe



Figure 23
IBM surePOS 563,
rear view showing integrated CDU

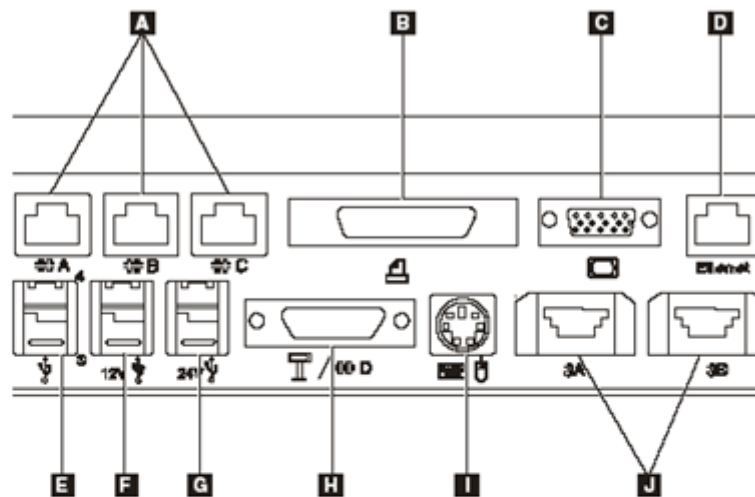


Figure 39. Rear connector panel

Ref.	Connector
A	Serial connectors (3)
B	Parallel connector
C	External video connector
D	Ethernet connector
E	USB connectors (2)
F	12-volt USB connector
G	24-volt USB connector
H	Distributed customer display connector
I	Keyboard/mouse cable
J	Cash drawer connectors (2)

Figure 24
IBM surePOS 563,
 schematic view showing ports and connections – cover removed



Figure 25 Hewlett Packard RP 5000 POS PC (front and rear views)



Figure 26 Epson IR 700 / IM 700 – front view



Figure 27 Epson IR 700 / IM 700 – showing rear connections with protective cover removed



Figure 28
Fujitsu team POS 2000-M,
showing integrated card swipe



Figure 29
Fujitsu team POS 2000-M,
rear view showing CDU



Figure 30
Fujitsu team POS 2000-M,
schematic view showing ports and connections – cover removed



Figure 31
Toshiba TEC ST-6501 – TFTST56 flat display
showing integrated card swipe



Figure 32
Toshiba TEC ST-6501 -
LIUST51 CDU



Figure 33
Toshiba TEC ST-6501, schematic view showing ports and connections – cover removed



Figure 34 Aures Galeo POS PC
(showing operator display)



Figure 35 Aures Galeo POS PC
(showing customer display)



Figure 36 Aures Galeo POS PC showing ports and connections – cover removed



Figure 37 Aures Odysse POS PC
(showing operator display)



Figure 38 Aures Odysse POS PC
(showing customer display)



Figure 39 Aures Odysse POS PC showing ports and connections – cover removed



Figure 40 Xn905 POS PC (showing operator display)

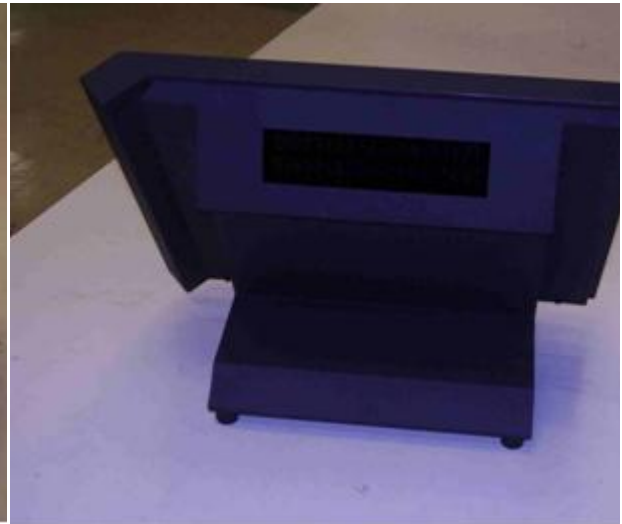


Figure 41 Xn905 POS PC (showing customer display)



Figure 42 Xn905 POS PC showing ports and connections – underside



Figure 43 SPOT M3 OPT on Stand



Figure 44 SPOT M3 OPT Housing and Screen



Figure 45 Wayne CRIND using the Spot M3

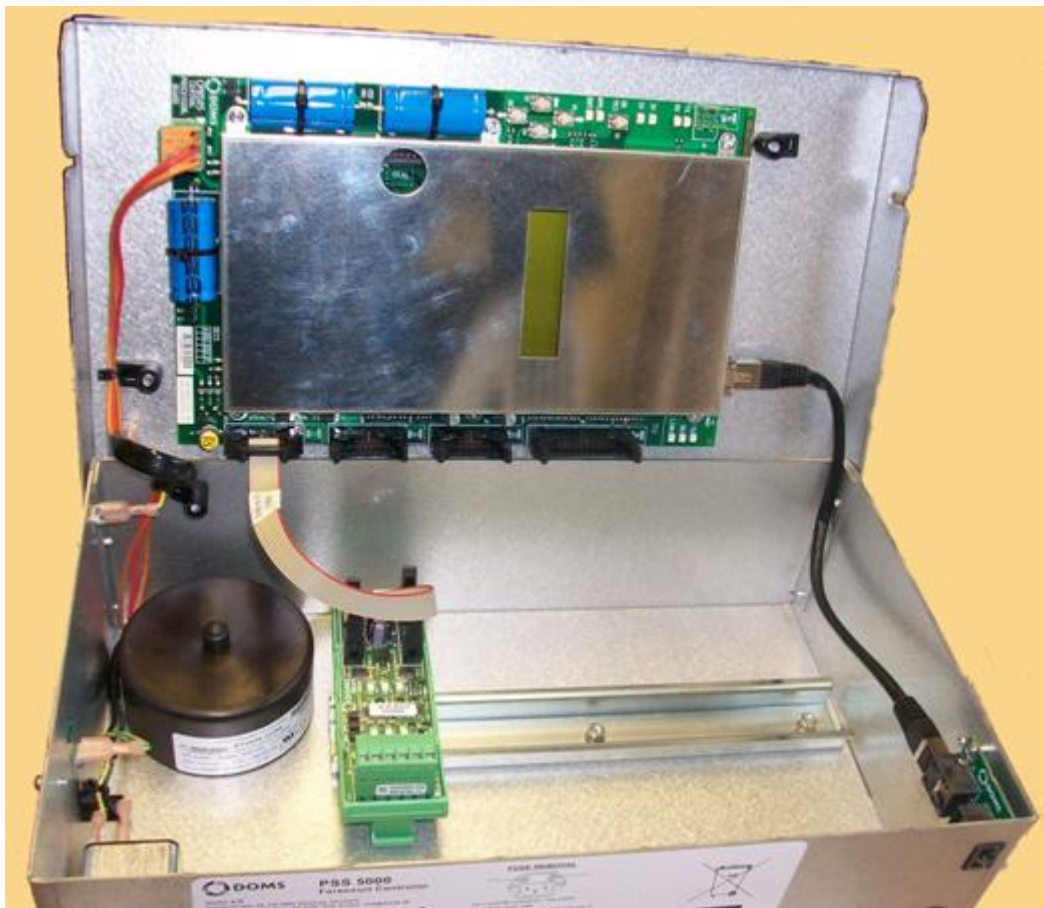


Figure 46 DOMS PSS5000 Compact

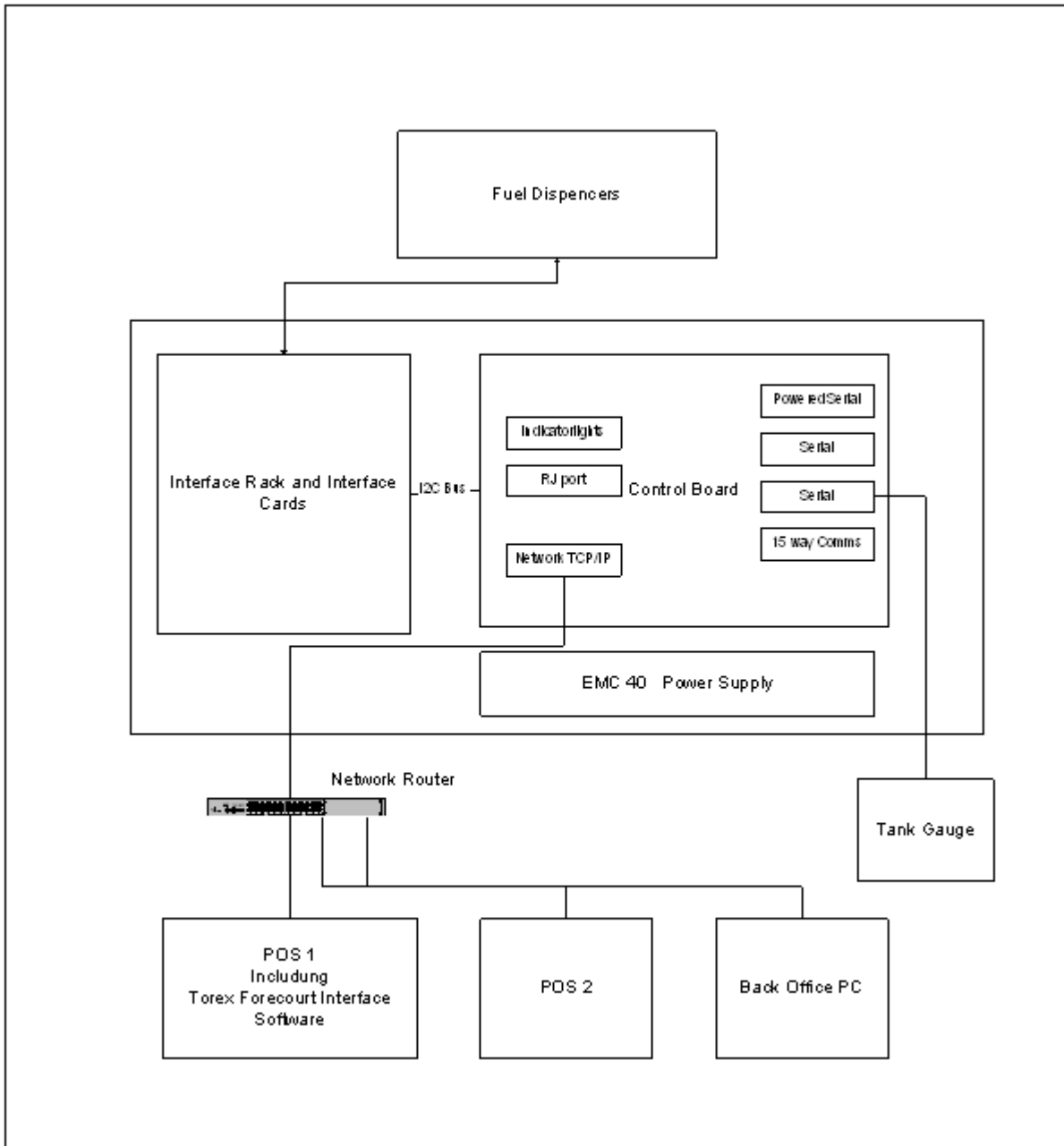


Figure 47 (TFL)/ Forecourt Interface Box schematic overview of system

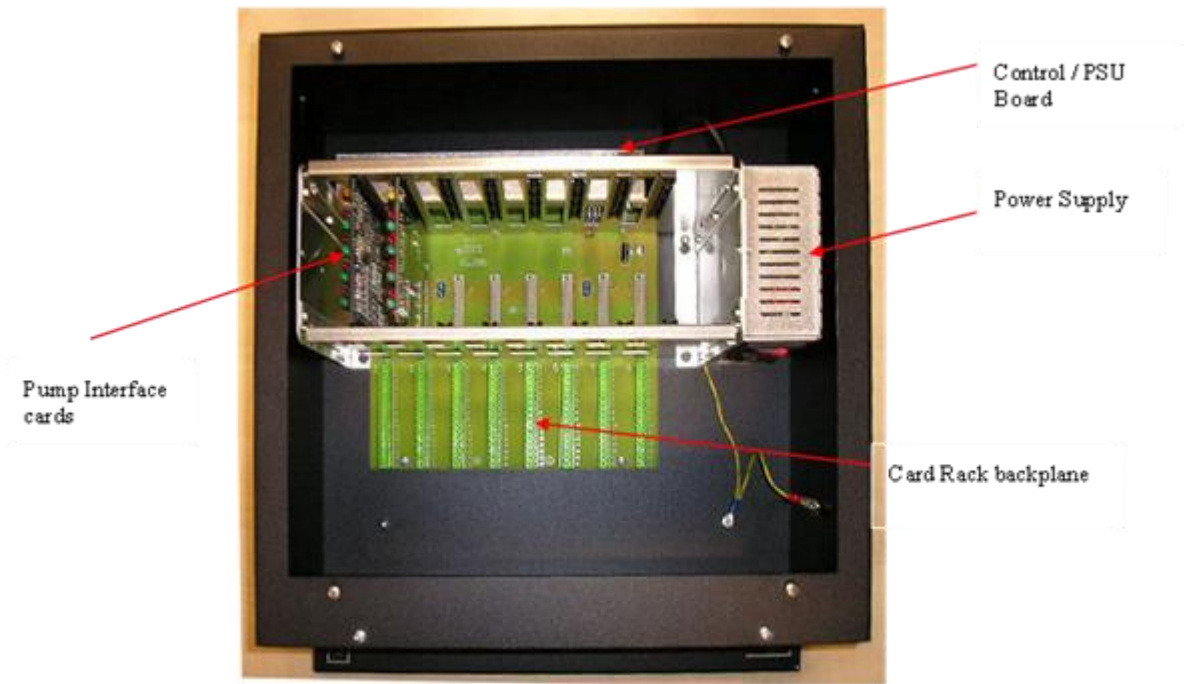


Figure 48 Forecourt Link Interface Box lid removed

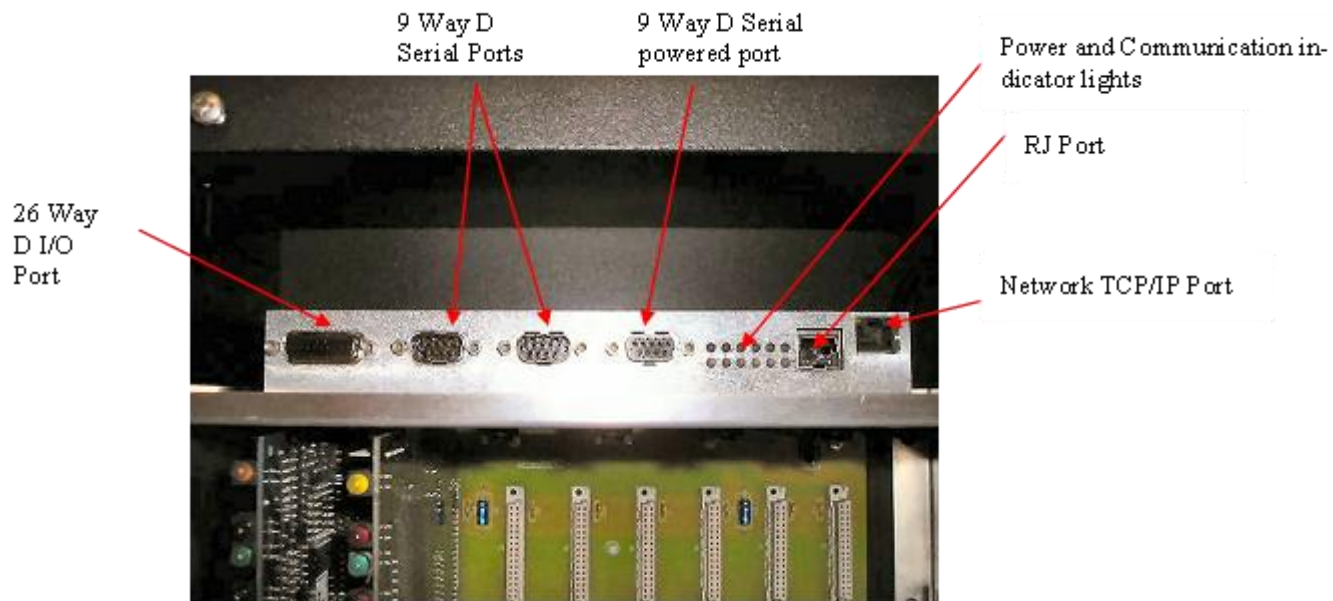


Figure 49 Forecourt Link Interface Box Control/PSU Board



Figure 50 Control / PSU Board



Figure 51 Torex Dispenser Interface Card type BA22800_B



Figure 52 Torex Dispenser Interface Card type BA07603



Figure 53 Gilbarco SPOT M3 Housing



Figure 54 Gilbarco SPOT M3 Alternative Housing

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