Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval

NMI S398

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Postec Model Forman 4 Control System for Fuel Dispensers for Motor Vehicles

submitted by Gilbarco Australia Pty Ltd
20 Highgate Street
Auburn NSW 2144

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 117-1, Measuring Systems for Liquids Other than Water, dated July 2004.

This approval becomes subject to review on **1/01/17**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	21/12/01
1	Pattern approved – certificate issued	28/02/02
2	Pattern amended – variant 1 approved – certificate issued	7/11/03
3	Variant 2 approved – certificate issued	12/03/04
4	Variant 3 approved – interim certificate issued	21/07/04
5	Variant 3 approved – certificate issued	23/08/04
6	Variant 1 amended – notification of change issued	12/08/05
7	Variant 1 amended – notification of change issued	11/01/06
8	Pattern amended – notification of change issued	12/06/07

DOCUMENT HISTORY (Cont…)

9	Pattern & variants 1 to 3 reviewed – variant 4 approved – certificate issued	15/10/07
10	Variant 1 amended – notification of change issued	10/09/08
11	Pattern amended – variant 5 approved – certificate issued	11/12/08
12	Variants 6 & 7 approved – certificate issued	5/11/10
13	Variant 5 amended – notification of change issued	10/02/11
14	Pattern amended – variants 8 to 10 approved – certificate issued	10/03/11
15	Variant 4 amended – variant 11 approved – certificate issued	12/05/11
16	Variant 5 amended – notification of change issued	4/08/11
17	Pattern & variants 1 to 11 reviewed & updated – Variant 5 amended – certificate issued	6/07/12
18	Variant 5 amended – Variant 12 approved – certificate issued	27/03/14
19	Certificate amended (submittor) – variant 13 approved – certificate issued	19/02/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI (or NSC) S398' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI (or NSC) S398' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

Special

Instruments are only approved for installations incorporating the approved fuel dispensers for motor vehicles described in this approval, and may only be used for central unit price setting of fuel dispensers which have been approved with that facility.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.

Dr A Rawlinson

TECHNICAL SCHEDULE No S398

1. Description of Pattern approved on 21/12/01

The pattern is a Postec model Forman 4 control system to provide an attended self-serve facility for compatible (#) NMI-approved fuel dispensers for motor vehicles.

The system (Figure 1) includes at least the Postec model Forman 4 console, a Postec model PCC4 controller and a Postec Intelligent Purchaser Indicator (PIPI).

1.1 Field of Operation

- The Forman 4 control console is approved for environment class A, i.e. in a climate controlled environment between 5ºC and 30ºC.
- The PCC4 controller and the PIPI indicator are approved for environment class N, i.e. between -10ºC and 55ºC ambient temperature range.
- The Forman 4 control console and the PCC4 controller can provide a self-serve arrangement for up to 64 approved Gilbarco fuel dispensers or any other approved compatible (#) fuel dispensers.
- The system allows pre-pay/pre-set deliveries when interfaced to fuel dispensers incorporating a pre-set device.
- The PIPI indicator also allows up to two transactions per fuel dispenser, i.e. the current sale on the fuel dispenser and a stored transaction.
- The nominal supply voltage is 240V AC.

(#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including.

1.2 System Description

(i) The Postec Forman 4 control console comprises an IBM compatible computer, a visual display unit, a keyboard and Forman 4 (or Focus) 'Visual Console' software version 1.x or 2.x operating under Microsoft Windows® environment. The visual display unit may incorporate a touch screen operation feature. An optional Postec programmable keyboard may also be used.

(ii) The Postec model PCC4 communications controller operates with software version 6.xx, and provides interface and data acquisition between the fuel dispensers and the control console(s). Features such as a communication modem and interface for a tank gauging system may be provided but are not covered by this approval.

(iii) At least one Postec Intelligent Purchaser Indicator (PIPI) is connected to the Postec PCC4 controller to allow the recall of the stored transactions under power failure condition. The PIPI displays the following information:

- The fuel dispenser ID number;
- The status of the transaction (e.g. current sale transaction or stored transaction);
- The type of fuel;
- The measured volume of fuel; and
- The total price.

(iv) Additional control consoles, with approved purchaser indicators, may be interfaced for multi-attended self-serve operation.

(v) An Epson model M119 or other equivalent (*) receipt printer may be fitted. Figure 2 shows typical receipts.

(vi) An optional uninterruptible power supply unit may be installed.

(*) "Equivalent" is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system.

1.3 Checking Facilities

(i) Receipt Printer

The system monitors the condition of the receipt printer and provides a visual warning of an error.

(ii) Customer Display (PIPI)

If the connection to the PIPI from the Forman 3 is interrupted or an error occurs with the PIPI, an error message is displayed on the operator's screen.

The button on the PIPI display will allow the manual recall of necessary transaction information, including the status (e.g. current sale or stored transaction). Memory authorisation must be disabled if the PIPI is disconnected from the PCC4 controller .

(iii) Unattended Authorisation

A small card icon indicates that the fuel dispenser has been authorised and is under the control of an unattended self-service device.

(iv) Communication Monitoring

The system monitors the communication with the fuel dispensers and any error detected is displayed to the operator.

1.4 Markings

The Postec controller, the Forman 4 or Forman 3 console, and the PIPI indicator are each marked with the following data:

Manufacturer's name or mark		.....
Model number		.....
Serial number		.....
Pattern approval number		NMI (or NSC) S398
Environmental class:	Controller	Class N (**)
	Console	Class A
	PIPI indicator	Class N

(**) Unless the variant describing a particular model controller specifies a different class.

Note: The variants describing other components may specify that they also must be marked with certain data.

1.5 Verification Provision

The Postec controller, the Forman 4 or Forman 3 console, and the PIPI indicator each have provision for a verification mark to be applied.

1.6 Sealing Provision

No sealing is required for this instrument.

2. Description of Variant 1 approved on 7/11/03

With the Postec model PCC4 communications controller operating with certain software versions in the format 6.xx as specified for the pattern.

The approved alternative software versions include, but is not limited to:

(i) Version 6.27 – modifies the PCC implementation software support for Email protocol multi-product dispensers.

(ii) Version 6.28 – supports the Gilbarco model Passport control system.

(iii) Version 6.29 – sale volume limits for non-retail applications.

(iv) Version 6.30 – modifies the PCC implementation software support for PEC protocol dispensers.

(v) Versions 6.31 and 6.32 – check that PIPI intelligent purchaser indicator is online to the PCC controller before adding transactions to memory.

(vi) Version 6.33 – allowing interfacing from a Postec 4DET2 series control system (as described in the documentation of approval NMI S450) to an external payment gateway known as PPS or Payment Processing System.

(vii) Version 6.35 – allowing interfacing to the Gilbarco FLEXPAY card-operated control system.

3. Description of Variant 2 approved on 12/03/04

The Postec model FOCUS control console which uses the same hardware (including IBM compatible computer, visual display unit, keyboard, etc.) as for the Forman 4 console of the pattern but now uses FOCUS ‘Visual Console’ software version 2.x operating under Microsoft Windows® environment.

4. Description of Variant 3 approved on 23/08/04

The Postec model Forman 3 point of sale (POS) control system to provide an attended self-service facility for compatible (#) approved fuel dispensers for motor vehicles.

The system is similar to the pattern (Figure 1) and includes at least the Forman 3 console (Figure 3), a Postec model PCC4 controller and a Postec Intelligent Purchaser Indicator (PIPI)

4.1 Field of Operation

The field of operation is as described for the pattern except as detailed below:

- The Forman 3 control console (Figure 3) is approved for environment class A, i.e. in a climate-controlled environment between 5ºC and 30ºC.

- The Forman 3 system can provide a self-serve arrangement for up to 32 compatible (#) approved fuel dispensers.
- The system can be used in a multi-mode operation, allowing the authorisation of fuel dispensers via the Forman 3 attended method or from an unattended self-service control device (e.g. the Postec model 4DET card-operated device).

(#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including.

4.2 System Description

The system is as described for the pattern except as detailed below:

(i) The Forman 3 POS system is comprised of a Forman 3 control console using Postec software version 2.xx, a programmable keyboard and a VGA display unit.

(ii) A Postec PCC4 controller and a Postec Intelligent Purchaser Indicator (PIPI) are both interfaced to the Forman 3 console via an RS-232 serial communications interface.

The PIPI display updates automatically for the benefit of the purchaser.

(iii) An Epson model M119 or other equivalent (*) receipt printer may be fitted. Figure 4 shows typical receipts.

(*) "Equivalent" is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system.

5. Description of Variant 4 approved on 15/10/07

With an On Track Innovations model EasyFuel control system (Figure 5) which is connected to a Postec model PCC4 controller to automatically identify customer vehicles.

Radio frequency identification devices, installed in compatible fuel dispenser nozzles and in customers' vehicles, control the authorisation of fuel deliveries through the Postec model PCC4 communications controller.

6. Description of Variant 5 approved on 11/12/08

With the Forman 4 (or Focus) 'Visual Console' version 1.x or 2.x software of the PCC being used in conjunction with certain other POS software (as listed below in Table 1) as part of an integrated operator control console. 'Visual Console' software provides all of the required fuel dispenser icons, pump control etc. to satisfy all of the legally required controls.

Note: Variant 12 describes similar instruments.

TABLE 1 – Approved systems complying with Variant 5

POS Software Types	Software Providers
Beacon	Beacon/Megabus
Kreative POS	Kreative Technology Pty Ltd
PT Fuel	Scanning Systems
Quick Fuel	Computer Vision
RetailTouch	Adelaide Business Software/TRAX
WINPOSt	Retech Global
SYM-PAC PoS	SYM-PAC Solutions
SupaGas POS	Supagas Pty Ltd
Idealpos	Idealpos Solutions Pty Ltd

7. Description of Variant 6 approved on 5/11/10

A Benq model T2200HD VGA monitor or equivalent (*), may be connected to the point of sale (POS) control console for use as the customer (purchaser's) indicator (Figure 6). A Postec Intelligent Purchaser Indicator (PIPI) display (#) is required in addition to the VGA display where the control system allows the storage of a fuel transaction per dispenser in memory.

Indication of information that is not subject to metrological control is allowed, provided that it cannot be confused with metrological information.

8. Description of Variant 7 approved on 5/11/10

A DigiPos model WD-202G display or equivalent (*), may be connected to the point of sale (POS) control console for use as the customer (purchaser's) indicator (Figure 7). A PIPI display (**) is required in addition to the display where the control system allows the storage of a fuel transaction per dispenser in memory.

The point of sale system includes a method to illuminate and blank all the elements of the DigiPos display to visually inspect its operation.

(*) "Equivalent" is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system.

(**) A PIPI display must be readily accessible for display when needed, if not already located in a position always visible to the purchaser.

9. Description of Variant 8 approved on 10/03/11

A Postec model PCC4E controller which is similar to the model PCC4 controller but which has updated internal circuit board with an integrated Ethernet controller.

10. Description of Variant 9 approved on 10/03/11

A Postec model PCC4EX controller (Figure 8a) which is similar to the model PCC4 controller but which includes a Single Board Computer (SBC) and an extended power supply.

The SBC provides additional system facilities which may include additional applications such as Electronic Funds Transfer (EFT) facilities. The facilities shall not interact with the system in a way that would cause an incorrect indication of the measured volume or price or effect the correct operation of any checking facilities. A typical PCC4EX system layout is shown in Figure 9a.

11. Description of Variant 10 approved on 10/03/11

A Postec model PCC4EXP controller (Figure 8b) which is similar to the model PCC4EX controller but where the Single Board Computer (SBC) has a peripheral plate assembly to facilitate the connection of point of sale peripherals. The SBC replaces the IBM compatible computer of the FOCUS control console (as described for Variant 2). A typical PCC4EXP system layout is shown in Figure 9b.

In addition, the model PCC4EXP controller may include point of sale facilities including cash drawers, a magnetic card or barcode reader and additional applications such as Electronic Funds Transfer (EFT) facilities. The facilities shall not interact with the system in a way that would cause an incorrect indication of the measured volume or price or effect the correct operation of any checking facilities.

Other Supplementary Certificates of Approval which utilise a model PCC4 controller, and as part of the system include a particular model of personal computer as an operators' console, may utilise the SBC of the model PCC4EXP controller provided the Certificate of Approval indicates an 'equivalent (*)' model of personal computer is permitted.

(*) "Equivalent" is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system.

12. Description of Variant 11 approved on 12/05/11

With a Gilbarco model Fastrack Automatic Vehicle Identification (AVI) system which is connected to any approved model of the PCC4 series of controllers described in this approval (Figure 10). The system utilises radio frequency identification devices installed in compatible fuel dispenser nozzles and in customers' vehicles. Customer credentials are retrieved by the system using a locally stored database of customer files, or remotely through an Electronic Payment Server (EPS).

Information is provided to the PCC4 controller which controls the authorisation of measurement transactions.

Other Supplementary Certificates of Approval which utilise a model PCC4 controller may utilise the Gilbarco Fastrack AVI system provided it does not interact with the system that would cause an incorrect indication of the measured volume or price or effect the correct operation of any checking facilities.

13. Description of Variant 12 approved on 27/03/14

Similar to variant 5 with the Forman 4 (or Focus) 'Visual Console' version 1.x or 2.x software of the PCC being used in conjunction with certain other 3rd party POS software (#) as part of an integrated operator control console (Figure 11). 'Visual Console' software provides all of the required fuel dispenser icons, pump control etc. to satisfy all of the legally required controls.

(#) Note that the submittor (Postec) must be consulted regarding the acceptability of any alternative 3rd party POS software.

Note: Instruments described above shall comply with the requirements of General Supplementary Certificate No S1/0B (except for the marking requirements).

14. Description of Variant 13 approved on 19/02/16

A Postec model PCC5 controller which is similar to the model PCC4 controller but which has an updated internal circuit board running version 6.xx software.

TEST PROCEDURE No S398

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

The maximum permissible errors applicable are those applicable to the fuel dispensers to which the instrument approved herein is fitted, as stated in the approval documentation for the fuel dispensers or in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Tests

A. The following tests are required to be performed at initial verification of the attended operated self-serve system or whenever a fuel dispenser or the calculator/indicator is changed.

1. Check the Forman 4 or FOCUS console software version number from the Managers Menu.
2. Check that the PCC4 controller software version number is one of the versions listed in this approval documentation; the version number can be viewed from the Forecourt Manager System Info Tab. It can also be viewed at the Postec Intelligent Purchaser Indicator (PIPI) by pressing the button down for more than 5 seconds and then releasing.
3. Check that the unit price change for the grade of fuel is implemented to the allocated fuel dispensers when they are available for authorisation.
4. Check that the control console and the customer display unit identify and display the correct data for the corresponding number allocated to the fuel dispenser.
5. Check that when the PIPI is disconnected from Postec PCC4 controller (simulation of fault), the fuel dispenser cannot be authorised for a second delivery unless the transaction for the first delivery has been completed.

6. A pre-paid delivery is only possible for fuel dispensers with pre-set facility. For a pre-paid delivery check that the amount displayed on the fuel dispenser equals the pre-paid amount. The maximum permissible error for the volume indicated and the actual volume delivered shall not exceed the minimum specified volume deviation (E_{min}).

   For fuel dispensers with V_{min} = 2 L, E_{min} = ±20 mL.

   Note: This test can be carried out in conjunction with the pre-set test for the fuel dispenser.

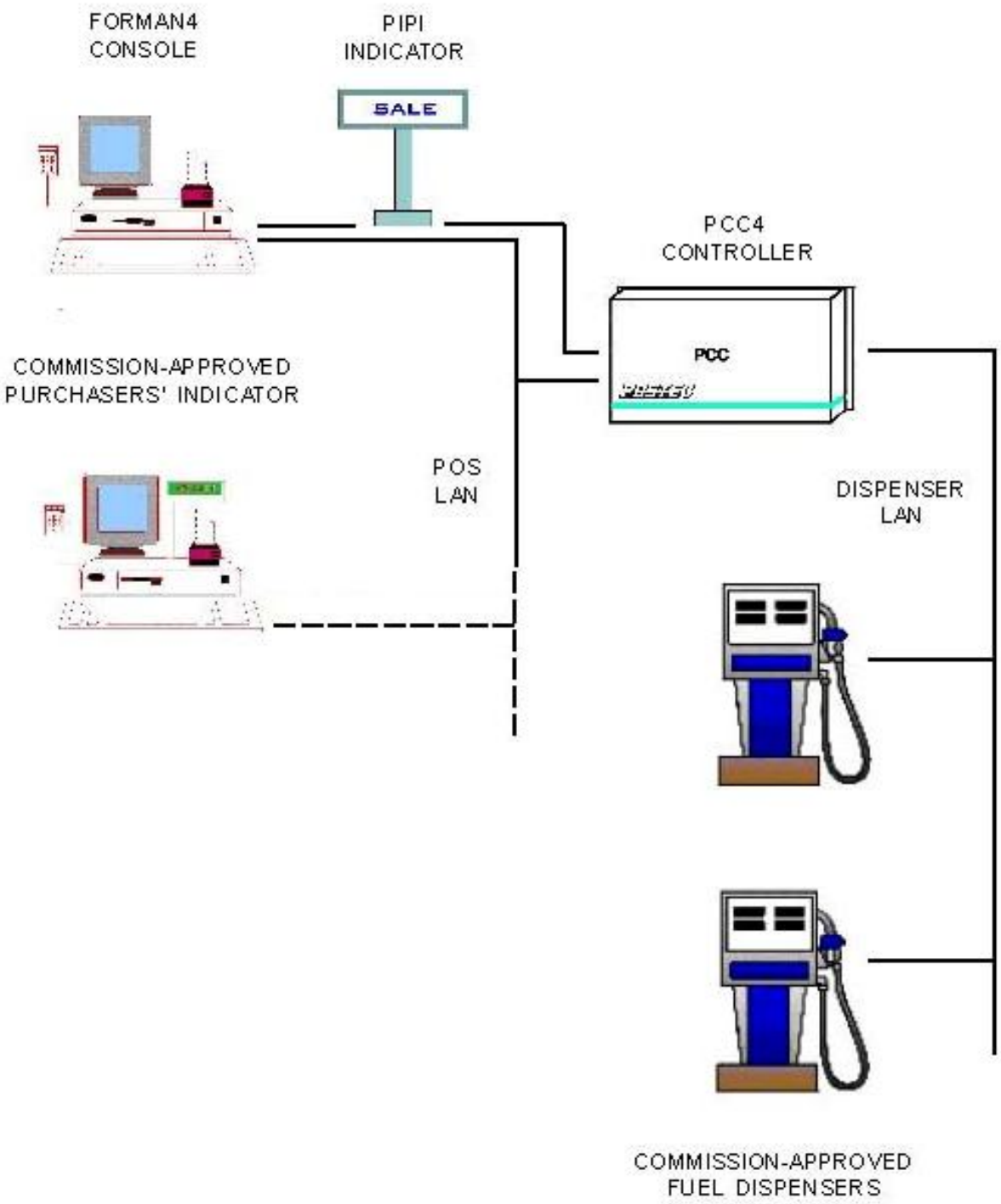
7. For systems with a printer, check that the printed receipt contains the correct format and data as per the typical samples in Figure 2.

B. In addition to the tests above, the following tests are required for systems including a model Forman 3 console (variant 3)

Points 2 & 3 are required at commissioning, thereafter may be conducted at the discretion of the inspecting officer.

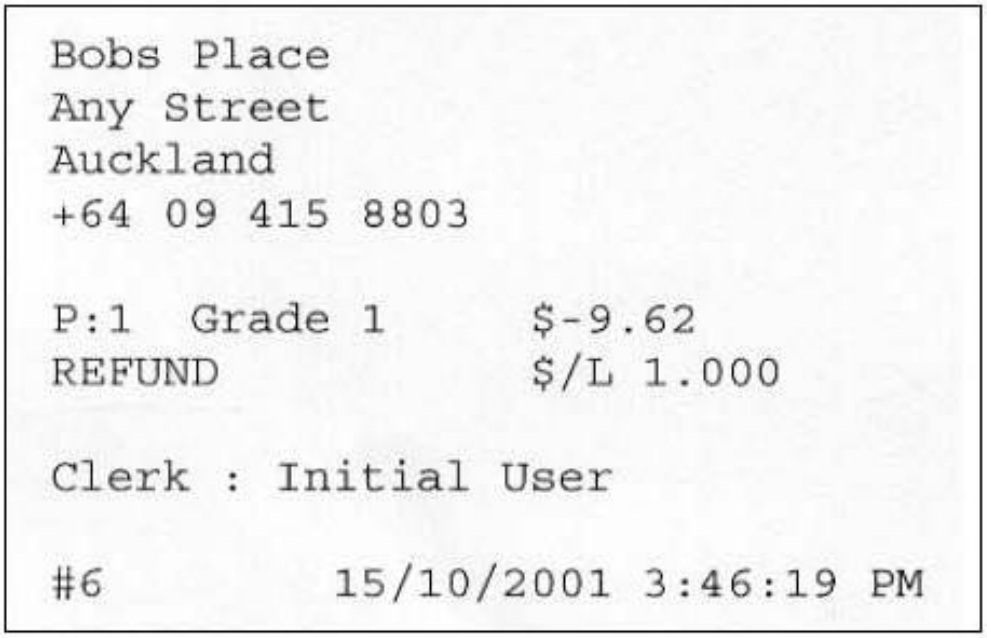
1. Check the Forman 3 console software version number from the Managers Menu.
2. Check that the control console and the PIPI identify and display the correct data for the corresponding number allocated to the fuel dispenser.
3. For systems with fuel dispensers incorporating a pre-set facility, check that the printed receipt contains the correct format and data as per the typical samples in Figure 4.

FIGURE S398 – 1



Typical Postec Model Forman 4 Control System

FIGURE S398 – 2



```
Bobs Place
Any Street
Auckland
+64 09 415 8803

P:1  Grade 1       $-9.62
REFUND             $/L 1.000

Clerk : Initial User

#6          15/10/2001 3:46:19 PM
```

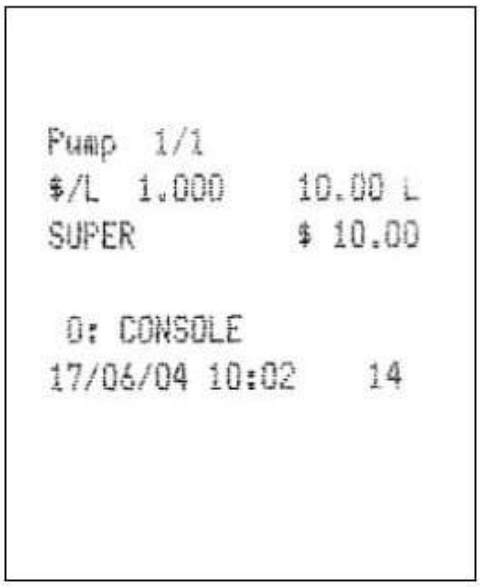
```
Bobs Place
Any Street
Auckland
+64 09 415 8803

P:2  Grade 3       $5.85
5.85L      @       $/L 1.000

Clerk : Initial User

#2          15/10/2001 3:35:08 PM

 ** DUPLICATE RECEIPT **
```

Sample Receipts – Model Forman 4 Control System

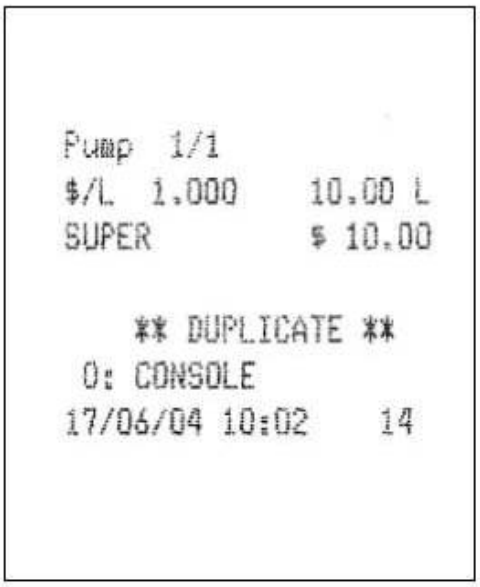
FIGURE S398 – 3

Postec Model Forman 3 Control Console – Variant 3

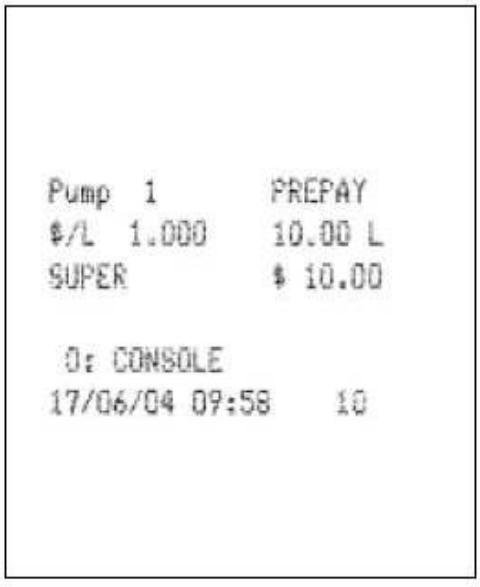
FIGURE S398 – 4



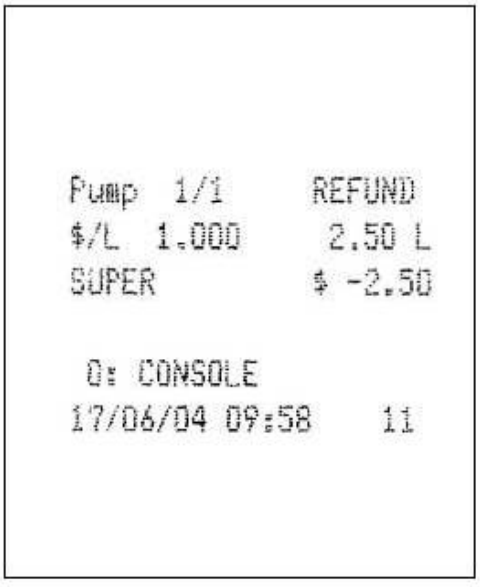
Postpay



Duplicate Postpay



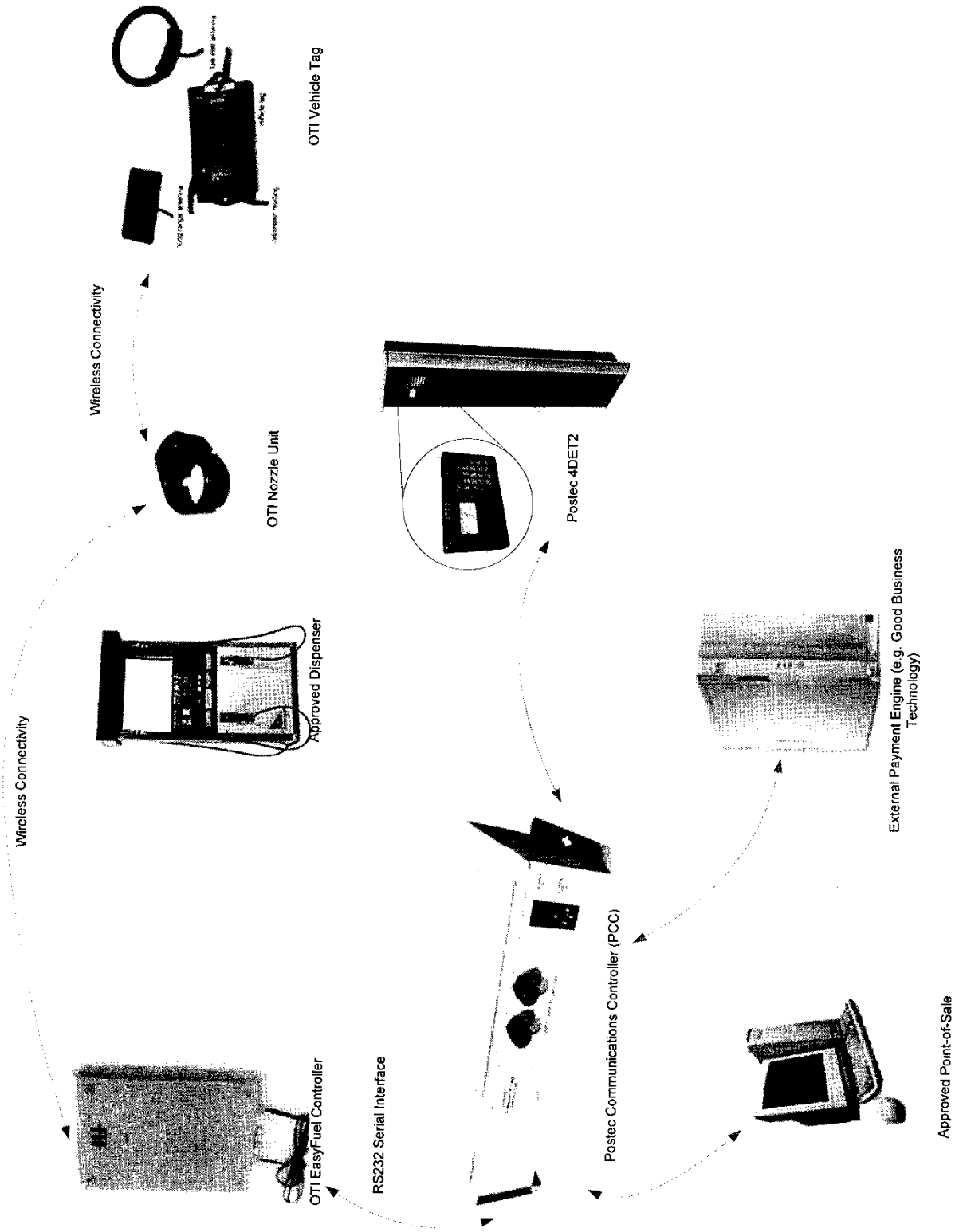
Prepay



Prepay Refund

Sample Receipts – Model Forman 3 Control System

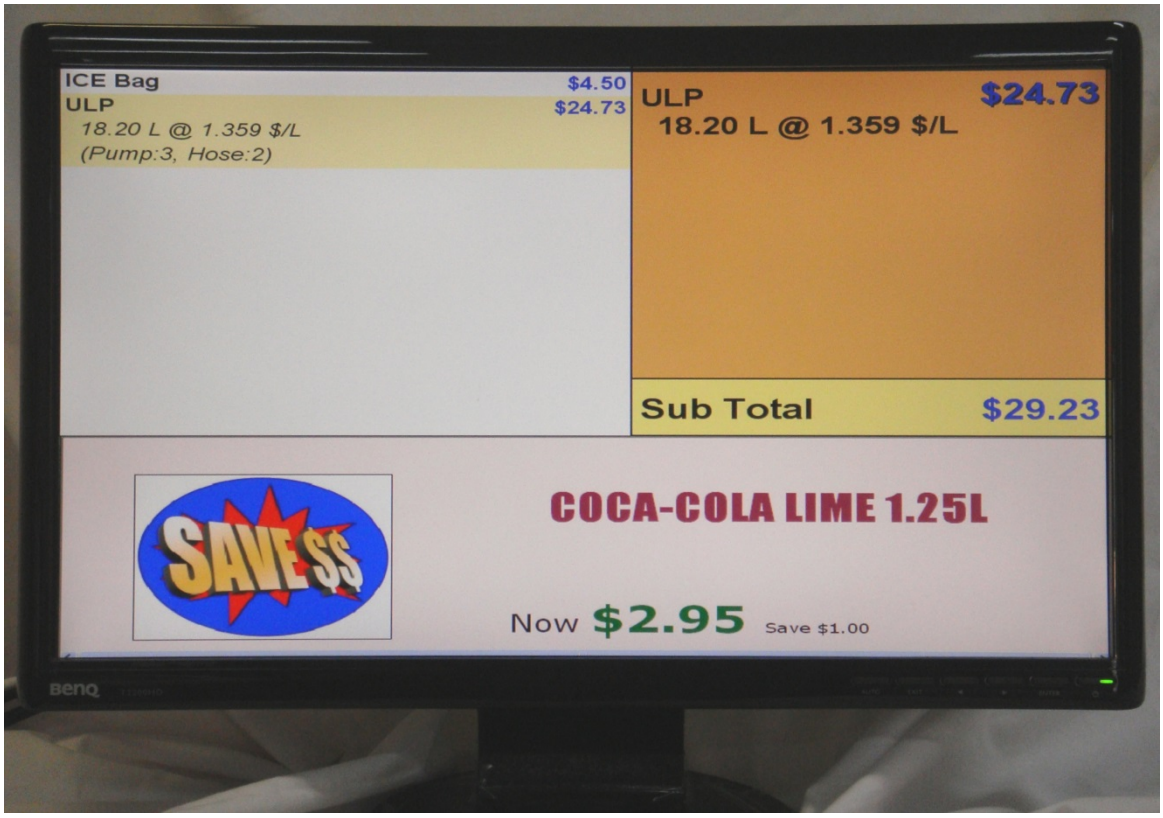
FIGURE S398 – 5



A Typical On Track Innovations Model EasyFuel Control System – Variant 4

(Note that the 'Point-of-Sale' and the 'External Payment Engine' are optional in some installations)

FIGURE S398 – 6

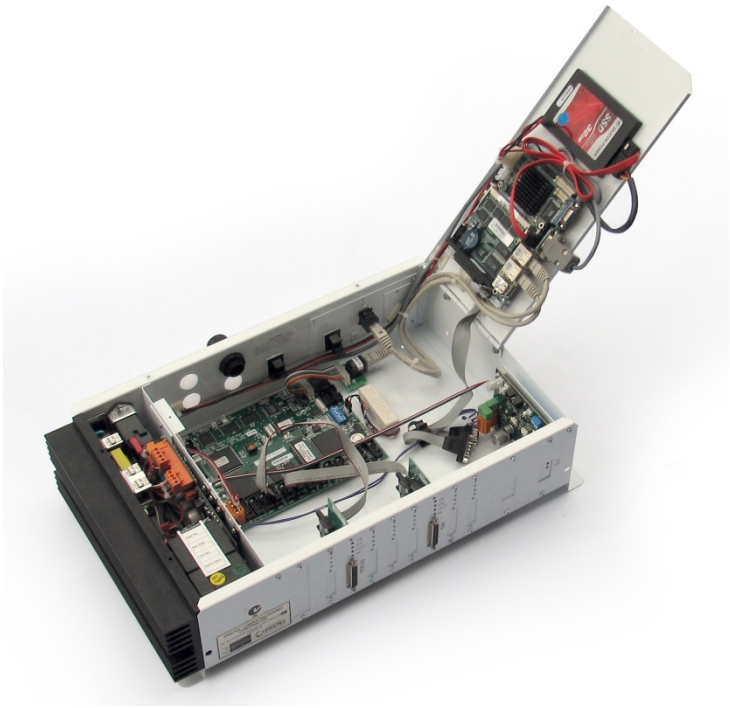


Typical Benq Model T2200HD VGA Display – Variant 6

FIGURE S398 – 7

Typical DigiPos Model WD-202G Display – Variant 7

FIGURE S398 – 8

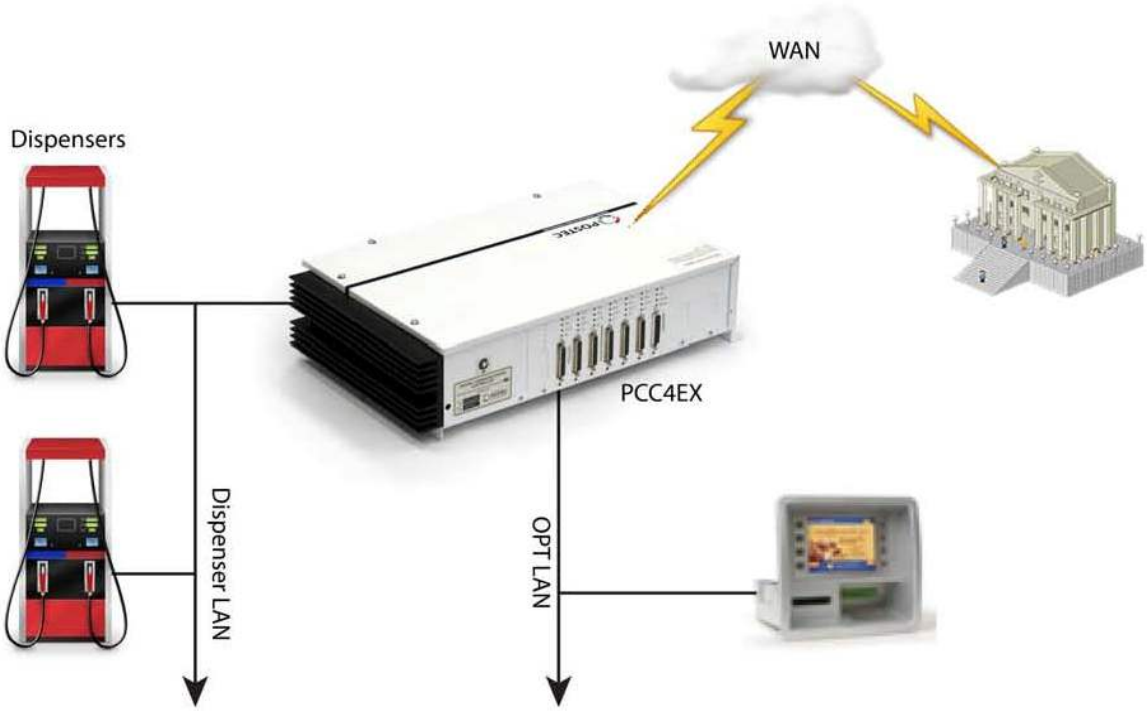


(a) Model PCC4EX Controller – Variant 9

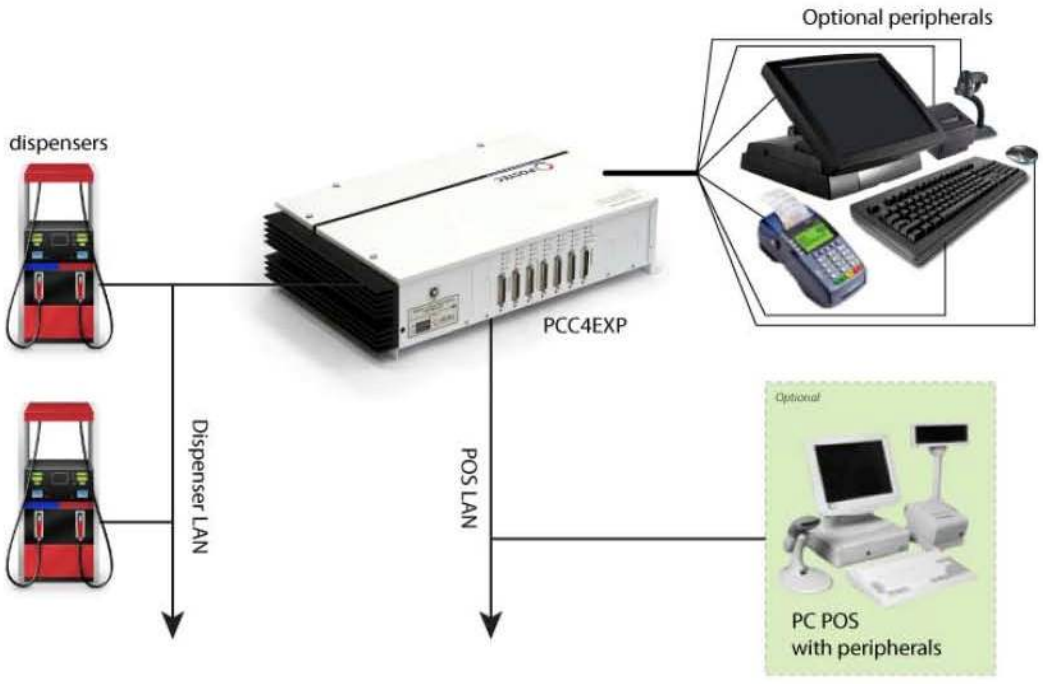
(b) Model PCC4EXP Controller – Variant 10

Postec Models PCC4EX and PCC4EXP Controllers

FIGURE S398 – 9



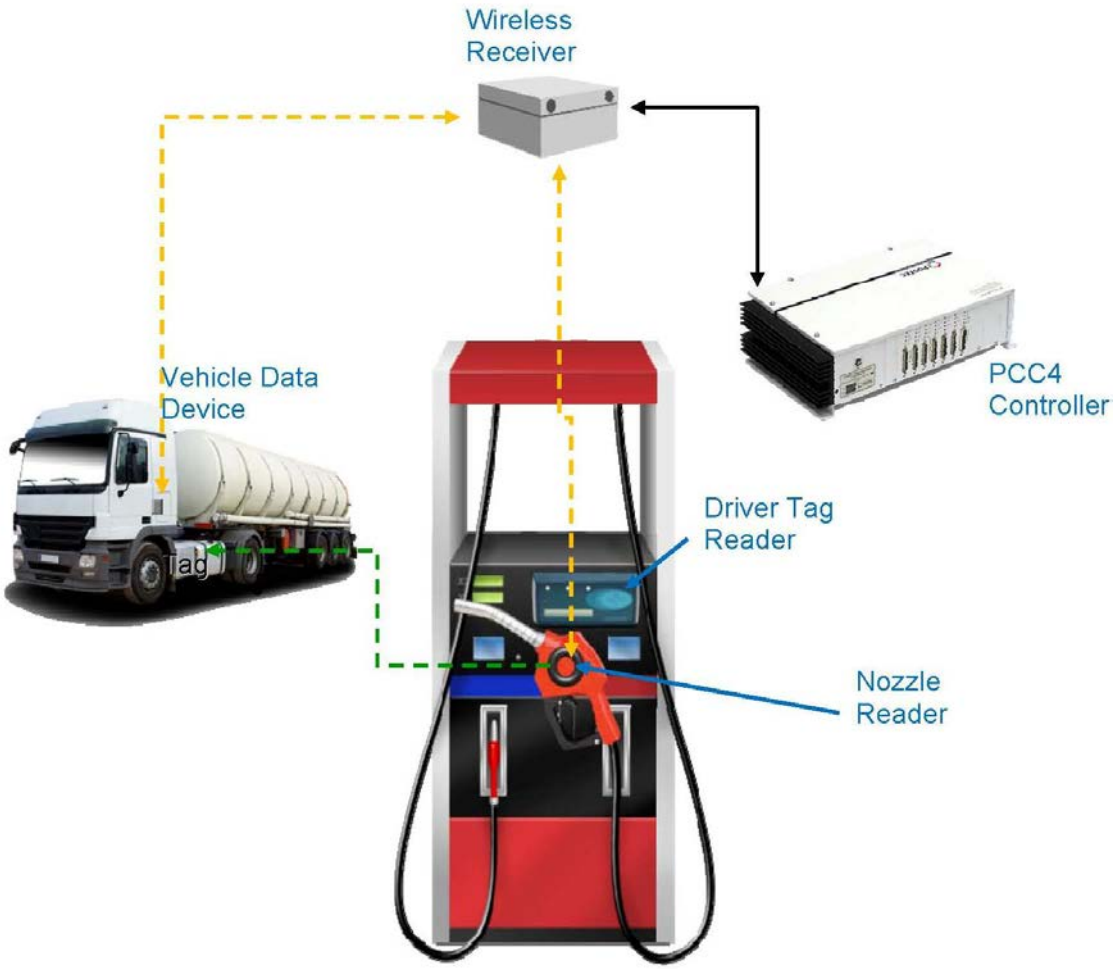
(a) Typical System Using Model PCC4EX Controller – Variant 9



(b) Typical System Using Model PCC4EXP Controller – Variant 10

Some Typical System Layouts Using Models PCC4EX and PCC4EXP Controllers

FIGURE S398 – 10



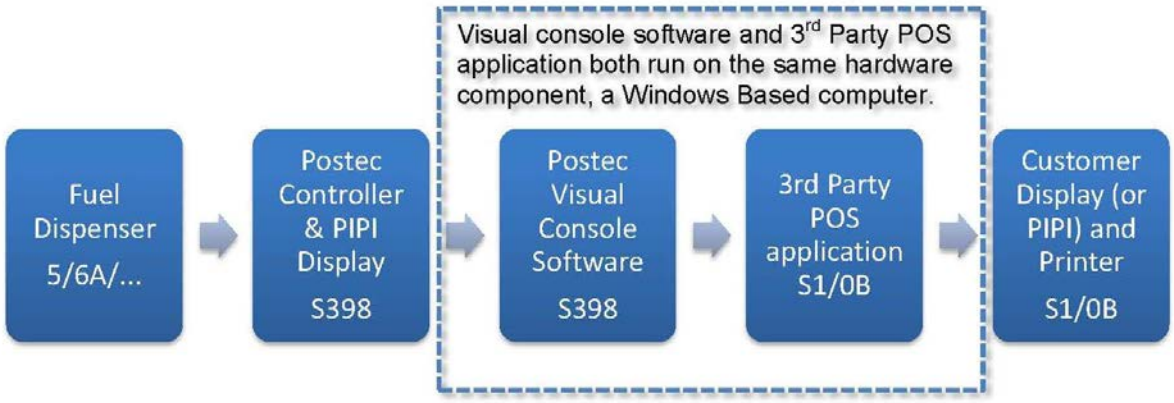
(a) Gilbarco Model Fastrack AVI System Overview

Car tag Car tag Truck tag with adaptor

(b) Various Vehicle Tags

Gilbarco Model Fastrack AVI System – Variant 11

FIGURE S398 – 11



Typical Control System With Forman 4 (or Focus) 'Visual Console' Software of the PCC Being Used in Conjunction With Other 3rd Party POS Software
(Variant 5 and 12)

~ End of Document ~