



PSD Codax

Global Leaders in Car Wash
Technology

Codax Embedded Ethernet Terminal Operators Manual

**Secure, reliable, easy-to-use and
innovative**
Car Wash and Forecourt Equipment.

CET-ETH-UM-ENG-080321-1.06

www.psdcodax.com



Defining the World of Car Wash Technology

Smartstart Plus | Smartstart Pro | Auto Sentry® Petro | Auto Sentry® Flex | Auto Sentry® CPT | WashConnect®

REVISION HISTORY

Document Number	Version	Date	Comments
CET-SER-UM-ENG-110220-1.01	1.01	11 th February 2020	1 st Release
CET-SER-UM-ENG-150320-1.02	1.02	15 th March 2020	Manuals split into SER and ETH
CET-SER-UM-ENG-010820-1.03	1.03	1 ST August 2020	Completed pending review
CET-SER-UM-ENG-290121-1.04	1.04	29 th January 2021	Reviewed
CET-SER-UM-ENG-240221-1.05	1.05	24 th February 2021	System Diagram Update
CET-SER-UM-ENG-080321-1.06	1.06	8 th March 2021	Reviewed

CODAX EMBEDDED TERMINAL OWNERS MANUAL

KEY

	Screen		Print
	Function Keys (Service Required)		Print Feed
	Function Keys (Function Required)		Correct
	Key Pad		Incorrect
	Flow Correct		On
	Flow Incorrect		Off
	Print		Printer Unavailable
	Clear		Insert Smartcard
	Expanded Menu		Remove Smartcard
	DHCP Option		Decision Required

CONTENTS

1	IMPORTANT SAFETY INFORMATION.....	7
2	CODAX SYSTEM INSTALLATION.....	9
2.1	SUMMARY OF CODAX SYSTEM COMPONENTS.....	9
2.2	CODAX SYSTEM COMPONENTS.....	10
2.2.1	CODAX TICKET TERMINALS	10
2.2.2	CODAX ACCESS TERMINALS	11
2.2.3	INSTALLATION OPTIONS.....	12
2.3	STANDARD CONNECTIONS – ULTRA or RETRO	14
2.4	INSTALLATION EXAMPLES	15
2.4.1	STANDARD ULTRA CABLED CONNECTION WITH ETHERNET POS LINK	15
2.4.2	STANDARD RETRO CABLE-FREE INSTALLATION WITH ETHERNET POS LINK	16
3	TERMINAL OVERVIEW AND LAYOUT.....	17
3.1	FEATURES AND CONTROLS.....	17
3.1.1	TERMINAL LAYOUT.....	17
3.1.2	KEYPAD OVERVIEW AND LAYOUT	18
3.1.3	FUNCTION KEYS.....	18
3.1.4	SERVICE SELECT KEYS	19
3.1.5	ALPHA NUMERIC ENTRY KEYPAD	19
3.1.6	CONTROL KEYS	19
3.1.7	THE WELCOME SCREEN.....	20
3.2	MENU ACCESS	21
3.2.1	THE CODAX MAIN MENUS	21
3.2.2	CODAX LEVEL 1 MENU	22
3.2.3	CODAX LEVEL 2 MENU	24
3.3	FUNCTIONAL OVERVIEW	25
3.3.1	TERMINAL CONFIGURATION.....	25
4	TERMINAL CONFIGURATION.....	27
4.1	THE COMMAND MENU	27
4.2	RESTORING SYSTEM DEFAULTS.....	28
4.3	COLD START.....	29
4.3.1	THE COLD START SYSTEM CONFIGURATION PROCESS	29
4.3.2	RESETTING THE SYSTEM CONFIGURATION	31
4.3.3	ENABLING MULTI-USE TICKETS (ULTRA ONLY)	32
4.4	SYSTEM SETUP MENU	33

CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.4.1	ACCESSING THE SETUP MENU.....	33
4.4.2	NAVIGATING THE SETUP MENUS.....	34
4.5	SETUP MENU FUNCTIONS.....	35
4.5.1	TIME AND DATE.....	35
4.5.2	VALIDITY.....	36
4.5.3	OFF PEAK SETUP.....	37
4.5.4	PASSWORD.....	39
4.5.5	ETHERNET.....	40
4.5.6	SELECT LANGUAGE.....	42
4.5.7	SYSTEM.....	43
4.5.8	SOFTWARE.....	44
4.6	TICKET SERVICES.....	45
4.6.1	THE TICKET MENU.....	45
4.6.2	CHECKING TICKETS (ULTRA ONLY).....	46
4.6.3	CANCELLING TICKETS (ULTRA ONLY).....	47
4.6.4	CANCELLING THE LAST TICKET ISSUED (ULTRA ONLY).....	48
5	TROUBLE SHOOTING.....	49
5.1	CODAX SYSTEM FAULT CODES.....	49
5.1.1	FAULT CODE 1 – MACHINE LINK ERROR (ULTRA ONLY).....	49
5.1.2	FAULT CODE 2 – MACHINE POWER FAILURE (ULTRA ONLY).....	49
5.1.3	FAULT CODE 3 – KIOSK LINK FAILURE (ULTRA ONLY).....	49
5.1.4	FAULT CODE 4 – KEYPAD FAULT (ULTRA ONLY).....	50
5.1.5	FAULT CODE 5 – ACCESS LINK ERROR (ULTRA ONLY).....	50
5.2	CODAX DISTRIBUTION UNIT LED INDICATORS.....	51
5.2.1	CODAX DISTRIBUTION UNIT POWER INDICATION.....	51
5.2.2	CODAX DISTRIBUTION UNIT SIGNAL INDICATION.....	51
6	CONTACT INFORMATION.....	53

1 IMPORTANT SAFETY INFORMATION

Prior to installing or operating this equipment, please read this Important Safety Information carefully.

Codax must only be installed and serviced by a competent person who has sufficient electrical systems and product service knowledge. End users/owners must not attempt any service operations or remove any covers.

Removal of any covers, especially at the car wash/service interface keypad may expose high voltage electrical components and risk of electrical shock which can cause serious injury and death.

Car wash machines are often powered by a 415/420 volts three-phase electrical supply. *Such supplies are extremely dangerous when unqualified persons attempt to service/touch them, presenting a very high risk of instant death.*

CE

- The only end user serviceable component is replacement ticket paper rolls.
- The person(s) responsible for installing or commissioning Codax must ensure that the Owner/Operator Manual is presented to the owner/operator of the system.
- The CE mark applying to Codax relates to Codax as a standalone system. It is the responsibility of the installer and or equipment manufacturer to ensure that the integrity of Codax or the equipment, especially the electrical integrity, is not affected or compromised in any way.
- The Codax 24VDC power supply unit (12VDC for printer-less POS linked Terminals) and Codax Ticket Terminal must be installed in a dry environment and only connected to an electrical supply that has been installed by a qualified electrician.
- The Codax Ticket Terminal/Codax Embedded Terminal must only be powered by a Codax 24VDC/12VDC Power Supply unit - It must never be connected to other power supplies and never connected directly to the mains electrical supply.
- The Codax Ticket Terminal/Codax Embedded Terminal is designed to be installed and operated indoors. Do not allow fluids to enter or to be splashed onto it.
- The Codax system or components are not designed to be installed or operated in hazardous areas.
- Check that the machine is safe to operate and clear of persons and property before testing at the end of the installation process.



- At end of life dispose of Waste Electrical and Electronic Equipment (WEEE) responsibly.

Codax™ is designed and manufactured by PSD Codax Ltd.

Axis 8, Hawkfield Business Park
Whitchurch
Bristol, BS14 0BY
England
www.psdcodax.com

CODAX EMBEDDED TERMINAL OWNERS MANUAL

Codax software copyright notice.

When you purchase each single Codax system you are granted a single licence to operate the one version of the operating system supplied with the hardware. No permission is granted to resellers or end purchasers to make copies of this software. Software changes or upgrades supplied by PSD by download or module format are for a single installation and must not be copied. Again a single licence is granted with each download or module. You are advised not to purchase or operate illegal versions of Codax software.

© 2021 PSD Codax Limited – All Rights Reserved

2 CODAX SYSTEM INSTALLATION

2.1 SUMMARY OF CODAX SYSTEM COMPONENTS

The PSD Codax system generally consists of items from the following component list and will depend on the clients purchase order instructions. Always check customer instructions and packing note to determine components required.

Please refer to Codax sales information to identify the features available according to the desired installation mode. In Retro (Cable-free) mode certain features and functions will not be available.

Ticket Terminals

CTT	Codax Ticket Terminal – Standard unit
CTT-Ex	Codax Ticket Terminal – Extended database version
CTT-S	Codax Ticket Terminal Secondary – Add a second Ticket Terminal to an Ultra (Cabled) installation
CET-Ser	Codax Embedded Terminal – For Serial POS linked installations
CET-Eth	Codax Embedded Terminal – For Ethernet POS linked installations
CTT-POS-Ser	Codax Ticket Terminal - With Serial POS connection, including Smartcard
CTT-POS-Eth	Codax Ticket Terminal - With Ethernet POS connection, including Smartcard

Ticket Terminal Upgrades:

SCU-CTT	Smartcard Upgrade for CTT – Add a Smartcard reader to CTT
WCB	Wash Connect Bridge – Optional upgrade to add access to Wash Connect

Access Terminals:

CAT-16	Standard Bezel Mount Codax Access Terminal – 16 Character display version
CAT-24	Flush mount Codax Access Terminal – 24 Character display version
CAT-ANC-16	CAT ANC Secondary Terminal – 16 Character display version
CAT-ANC-24	CAT ANC Secondary Terminal – 24 Character display version

Access Terminal Upgrades

SCU-CAT	Smartcard Upgrade for CAT – Add a Smartcard reader to CAT
BSM-CAT	Barcode Scanner Module – Optional upgrade kit for CAT

Installation:

CDU	Codax Distribution Unit – Distributes signal and power for Ultra (Cabled) installations
CPS24-xx	Codax 24VDC Power Supply unit – For Retro (Cable-free) installations
CPS12-UK	Codax 12VDC Powers Supply unit – For CET Retro installations
CPS-CAT	24VDC Power supply for Codax Access Terminal – Option for Retro connected machines without suitable 24VDC power supply
CWIIK	Car Wash Interface and Installation Kit – Machine specific for CAT installation
CAT-HP	Codax Access Unit Housing with bi-directional Pedestal
CAT-HW	Codax Access Unit Housing with Wall mounting bracket
MK-CAT	Mounting Kit for Codax Access Terminal – When Access Unit housing is not required
POS-LK	Point Of Sale Link Kit
DRK-232	Dual Retro Kit for RS232
DRK-485	Dual Retro Kit for RS485

ANC	Access Network Controller – Local network controller for multiple services of same type
ANC-Ex	Access Network Controller – Expanded version
BOB-232	Breakout Box for RS232
SER-232	Serial Router for RS232

2.2 CODAX SYSTEM COMPONENTS

2.2.1 CODAX TICKET TERMINALS

The Codax Ticket Terminal in its various forms is the central controller for all Codax installations. From here the system is configured and Ticket sales are made. The CTT is normally situated on the kiosk sales desk convenient for the sales person. Adequate space should be allowed behind to allow cable access.

Ticket Terminal variations:

CTT	Codax Ticket Terminal - Standard version for generating Codax codes stand alone with printer.
CTT-Ex	Codax Ticket Terminal with Extended Database Range. Similar to standard version but uses an extended database range to allow both terminals to operate on the same installation. Add a second Ticket Terminal to a Retro installation.
CTT-S	Codax Ticket Terminal Secondary – The Codax Ticket Terminal Secondary unit allows a second Ticket Terminal to be added to provide a second ticket sales point. Codes issued at the Secondary are requested from the PRIMARY Ticket Terminal. This is normally for Ultra (Cabled) installations as it requires a CDU. For Retro the CTT-Ex may be a better solution – See installation examples.
CET-Ser	Codax Embedded Terminal – Serial – Codax code generator with Serial POS link without printer in smaller housing.
CET-Eth	Codax Embedded Terminal – Ethernet – Codax code generator with Ethernet POS link without printer in smaller housing.
CTT-POS-Ser	Codax Ticket Terminal POS linked – Serial – Codax code generator with Serial POS link with printer and Smartcard in standard CTT housing.
CTT-POS-Eth	Codax Ticket Terminal POS linked – Ethernet – Codax code generator with Ethernet POS link with printer and Smartcard in standard CTT housing.

The following items are available as upgrades to the standard Ticket Terminals list above.

Smartcard Upgrade for Codax Ticket Terminal CTT (SCU-CTT)

This upgrade is available for CTT and CTT-S to allow the Codax Smartcard to be added to the system. This option should be added at the time of CTT purchase as this is an internal fit and may not be added retrospectively. This upgrade is not available for CET. If POS link and Smartcard is required, CTT-POS should be used.

Wash Connect Bridge (WCB)

The Wash Connect Bridge connects to Wash Connect. Contact PSD Codax for more details. See *Contact details at the end of this manual, 6 - CONTACT INFORMATION.*

2.2.2 CODAX ACCESS TERMINALS

The Codax Access Terminal is fitted at the car wash machine or other service controller and it is where the customer redeems the unique Codax code purchased. The CAT provides the control signals required to operate the wash service and is capable of operating all common automatic car wash machines. Auxiliary service controls are also available to operate manual services such as Jet-Washes and Vacuum stations. For cabled installations (Ultra), the CAT is linked to the Codax Distribution Unit at the sales point via a 4-core screened cable. For cable-free installations (Retro) no such link is required – refer to installation examples.

Two Access Terminal variations:

CAT-16	Standard version with a 16 character display mounted in a water resistant housing.
CAT-24	Flush mount version with a 24-character display mounted on a flush mountable panel.

ANC Secondary Terminal (CAT-ANC-16/24)

The CAT-ANC is a special version of the CAT when using the Access Network Controller – see Installation examples. When using the Codax Access Terminal as an ANC-Secondary, two versions are available for 16 and 24 character displays as for standard unit defined above

The following items are available as upgrades to the standard Ticket Terminals list above.

Smartcard Upgrade for Codax Access Terminal CAT (SCU-CAT)

This upgrade is available for CAT to allow the Codax Smartcard to be added to the system. The SCU-CAT is part of the CAT installation and may be fitted retrospectively with a modified CAT mounting panel.

Barcode Scanner Module for Codax Access Terminal (BSM-CAT)

The Barcode Scanner Module is an optional addition to the Codax Access Terminal installation. With Barcode printing enabled on the Ticket Terminal the 6-digit Codax code is printed in the form of a barcode that the user can scan at the Access Terminal instead of manual entry. The BSM-CAT is part of the CAT installation and may be fitted retrospectively with a modified CAT mounting panel.

2.2.3 INSTALLATION OPTIONS

Codax Distribution Unit (CDU)

The CDU is only required for Ultra (Cabled) installations. The CDU is designed to be wall mounted using the brackets supplied. The unit should not be covered as overheating could occur. The unit requires a 240 Volt AC electric supply fused at 5 amps. The CDU receives the cable connections from the Codax Ticket Terminal, Point of Sale Terminal (optional) and the Codax Access Terminal(s). This unit provides 24VDC power supply to the CTT and CAT(s). A standard 5 metre connection lead is supplied for connecting the CDU to the Codax Ticket Terminal.

A single CDU connects to a maximum of 4 CATs. This however may be easily expanded – Contact PSD Codax for expansion possibilities. See *Contact details at the end of this manual, 6 - CONTACT INFORMATION.*

Codax Power Supply unit - 24VDC (CPS24-xx)

This is for Retro (Cable-free) installations to provide a 24 Volt DC power supply for the CTT and should therefore be located in a suitable and convenient location close to the CTT. A standard 5 metre connection lead is supplied for connecting this unit to the CTT. This is supplied for CTT and CTT-POS Retro installation.

Four versions are available to suit the local power outlet:

CPS24-EU	European style plug
CPS24-UK	UK style plug
CPS24-US	US style plug
CPS24-AX	Auxiliary No plug

Codax Power Supply unit - 12VDC (CPS12-UK)

This is lower-cost, lower-power PSU alternative, suitable for the CET only. Available with UK style plug only.

Codax Power Supply for Codax Access Terminal (CPS-CAT)

This 24VDC power supply is available to provide power for the CAT if this is not available at the machine installation. This is not necessary for an Ultra installation where power is supplied via the cable to the CDU.

Car Wash Interface and Installation Kit (CWIIK)

This is a machine specific kit according to the installation. This includes a 6/16 way interface (as required), cabling and including CAT – language and machine variant.

Mounting Kit for Codax Access Terminal (MK-CAT)

Hardware mounting kit for the Standard CAT (16-character). This is a non-flush-mount for installation into the operators own cabinet design.

Codax Access Terminal – Housing Pedestal (CAT-HP)

Pedestal Housing kit for the Standard and Flush-mount CAT (24-character). This housing includes front panel, with Smartcard and Barcode options, top box surround and pedestal leg.

Codax Access Terminal – Housing for Wall mounting (CAT-HW)

Wall Mounted Housing kit for the Standard and Flush-mount CAT. This housing includes front panel, with Smartcard and Barcode options, top box surround and wall mounting kit.

Point Of Sale Link Kit (POS-LK)

Connection kit for CET to POS. Cable for single POS connection. Codax Serial Router included for multiple POS connection.

Dual Retro Kit for RS232 link (DRK-232)

This kit allows two CAT terminals to be connected and handle the Dual Retro operation mode over RS232. This kit includes two Current Loop Drivers (CLD) with connections to CAT. The CLD not only provides an extended operating range but also maintains dual mode functionality if the power to either machine is removed for maintenance.

Dual Retro Kit for RS485 link (DRK-485)

This kit allows two CAT terminals to be connected and handle the Dual Retro operation mode over RS485. This kit includes two Dual Link Power Loop (DLPL) with connections to CAT. The DLPL maintains dual mode functionality if the power to either machine is removed for maintenance.

Access Network Controller (ANC)

The ANC allows three or more machines of the same type to be connected for Retro installations up to a maximum of eight. An example of this is a Jet Wash with three or more bays. A single ticket for Jet Wash may then be used at any Jet Wash bay. The ANC provides a local comms network linking the CATs in this installation. See installation examples for the ANC configuration.

Access Network Controller Expanded (ANC-EX)

Expanded ANC increases the maximum number of machines networked, to sixteen.

Breakout Box for RS232 (BBX-232)

This unit is used to add a Secondary CTT to an installation or a single POS connection for CET.

Serial Router for RS232 (SRR-232)

This unit allows up to 3 POS terminals to be added to an installation for CET.

2.3 STANDARD CONNECTIONS – ULTRA or RETRO

The basic Codax system has a number of Codax Access Terminals (CAT) connected to and controlling the forecourt services and a Codax Embedded Terminal (CET) located within the sales kiosk. Tickets, for a specific service and program number, purchased at the kiosk and issued by the CET containing a six-digit Codax code that is redeemed when entered at the CAT and the wash is started.

Each CAT can operate in one of two modes, Ultra and Retro. This is determined by the installation and how service codes are issued and validated. The main difference between the two modes is in the connection of the CET to CAT. For Ultra (cabled), the CET is connected to the CAT via the Codax Distribution Unit (CDU). For Retro (cable-free) no physical connection between CET and CAT is required.

Some additional functionality is available at the CET when operating in Ultra mode, such as Multi-use tickets and connection to the ICS Wash Connect facility. This installation requires cross-forecourt cabling.

Contact PSD Codax to discuss specific installation requirements. See *Contact details at the end of this manual, 6 - CONTACT INFORMATION.*

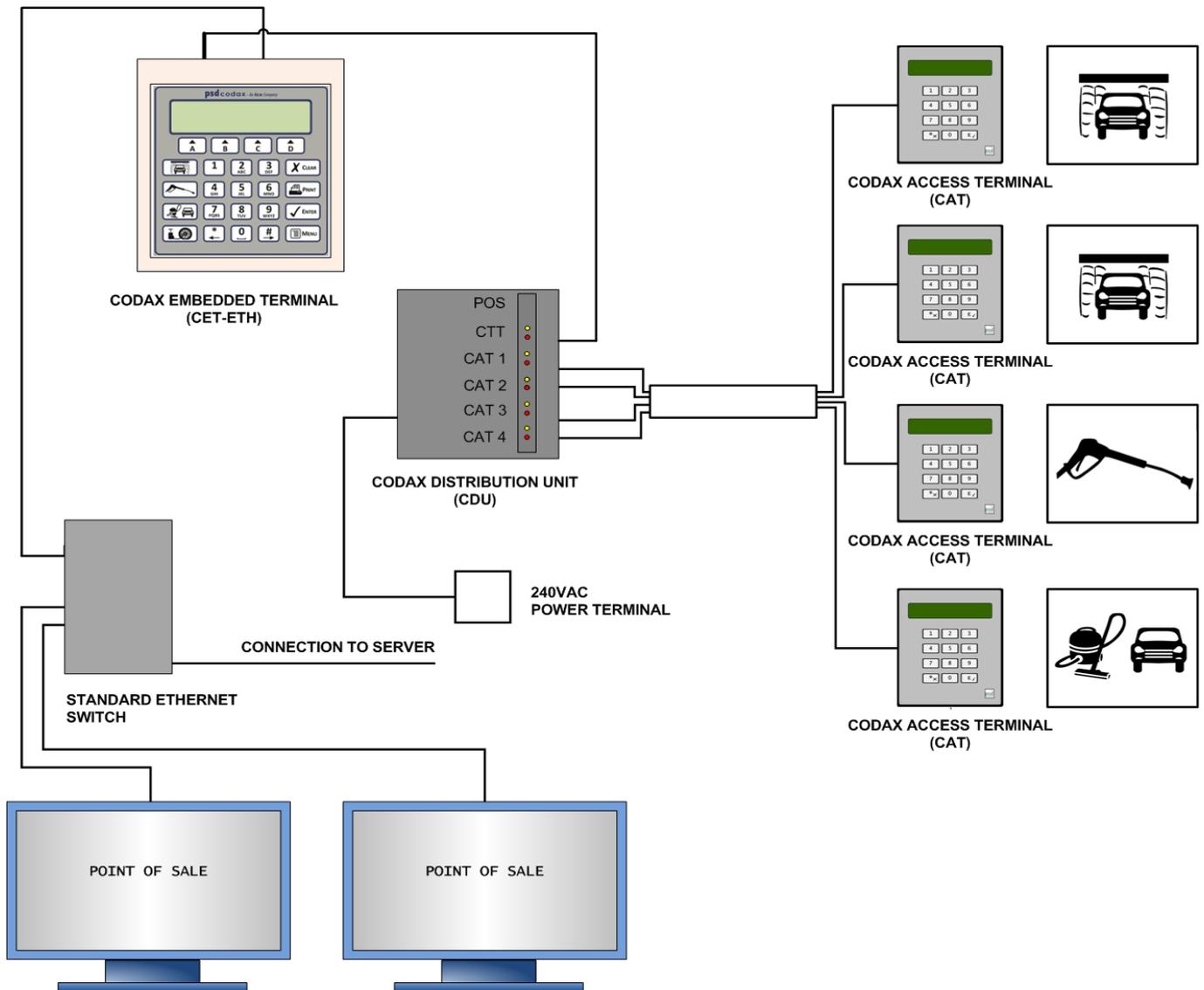
2.4 INSTALLATION EXAMPLES

2.4.1 STANDARD ULTRA CABLED CONNECTION WITH ETHERNET POS LINK

To connect the Codax Embedded Terminal to a POS over Ethernet, the CET is linked to the server using a standard Ethernet Switch to connect to the site server. The CET links to the CATs via the CDU as in other Codax Ultra installations.

The example below shows a Codax Ultra installation with two POS terminals connected via Ethernet. The installation supports two Brush Wash machines, a Jet Wash bay and a Vacuum bay.

Note: The position of the CET connections left and right need to swap to match the CET itself, i.e. right is the Ethernet and left is the CDU.



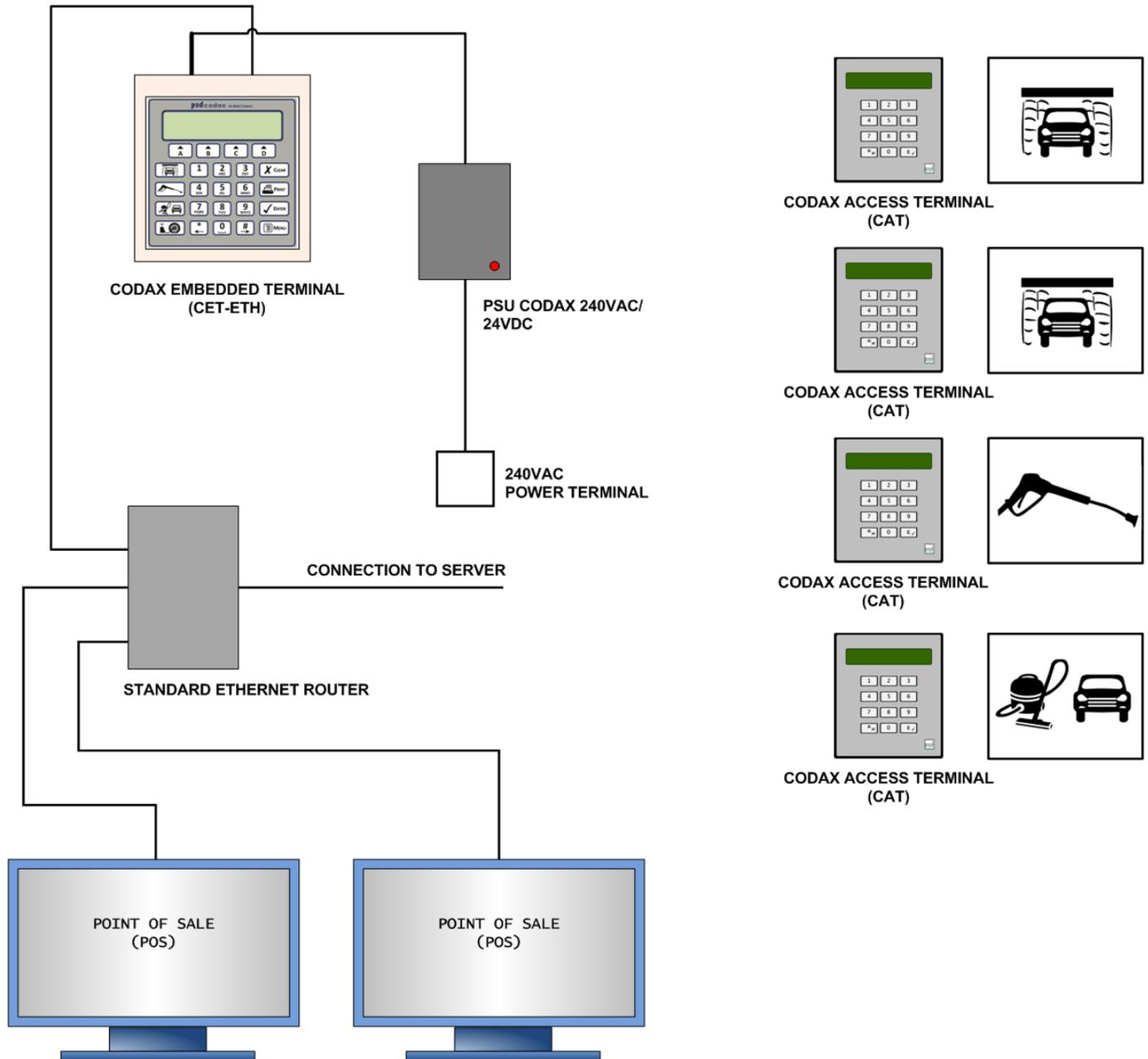
Standard Ethernet POS Linked Codax Installation Example for Ultra Mode

CODAX EMBEDDED TERMINAL OWNERS MANUAL

2.4.2 STANDARD RETRO CABLE-FREE INSTALLATION WITH ETHERNET POS LINK

To connect the Codax Embedded Terminal to a POS over Ethernet, the CET is linked to the server using a standard Ethernet Switch connected to the site server. The CET links to the CATs via the CDU as in other Codax Retro installations.

The example below shows a Codax Retro installation with two POS terminals connected via Ethernet. The installation supports a Brush Wash machine, a Jet Wash bay and a Vacuum bay.

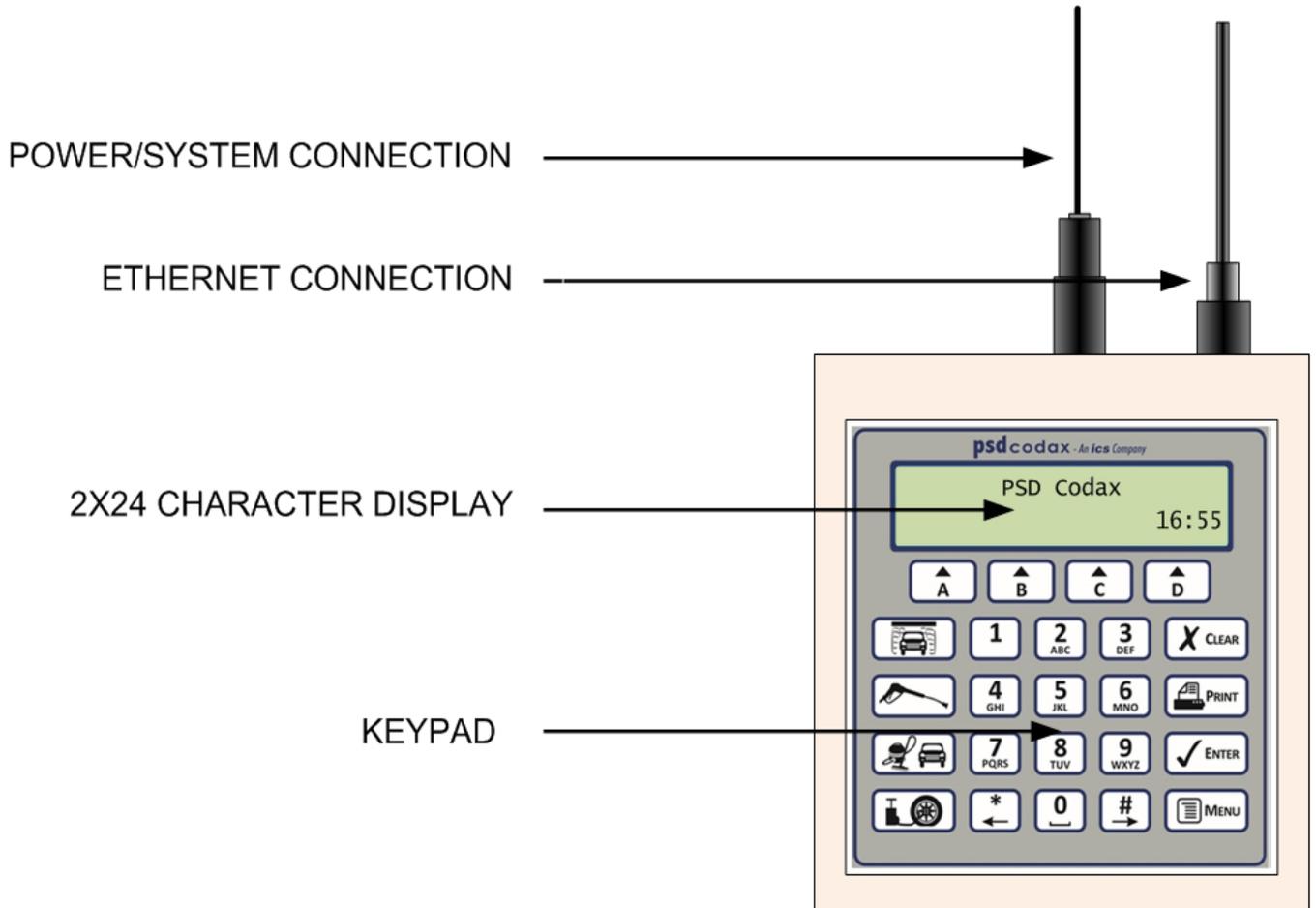


Standard Retro Codax Installation with Ethernet POS Connection

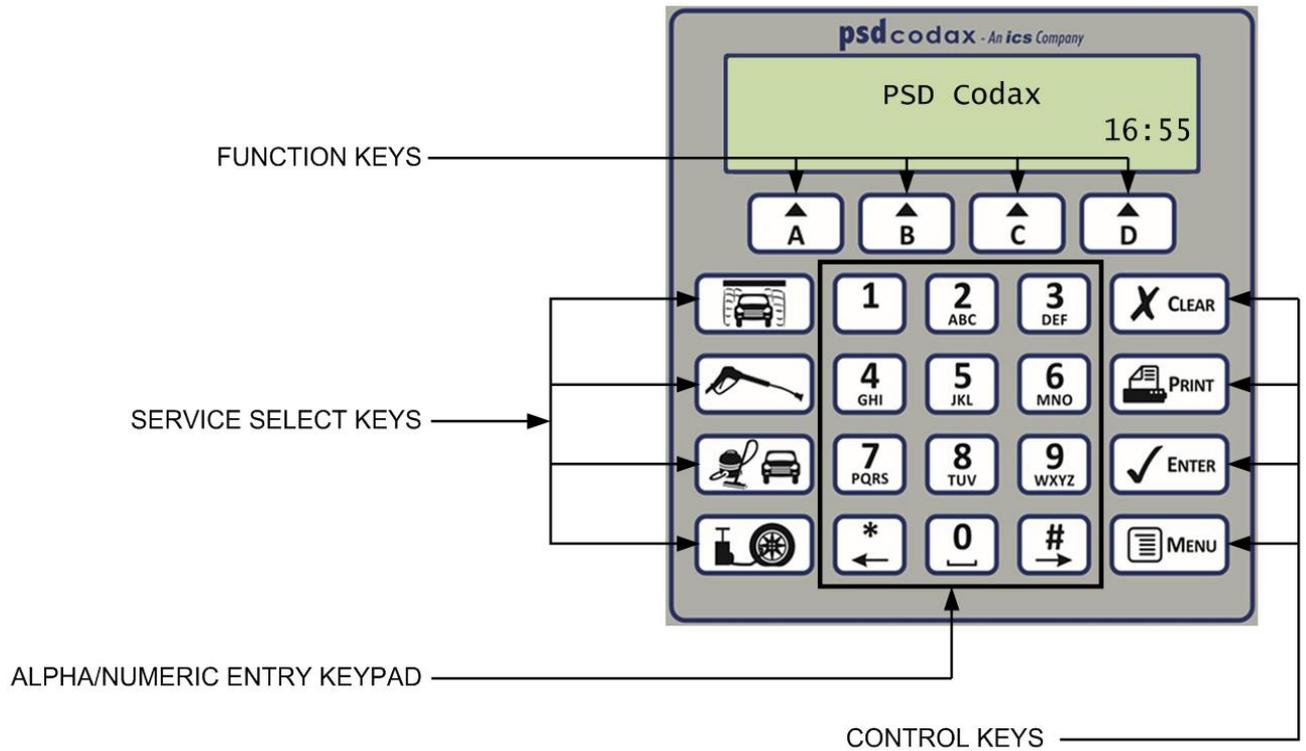
3 TERMINAL OVERVIEW AND LAYOUT

3.1 FEATURES AND CONTROLS

3.1.1 TERMINAL LAYOUT



3.1.2 KEYPAD OVERVIEW AND LAYOUT



3.1.3 FUNCTION KEYS

The operations performed by the function keys are variable. The functions available are shown on the screen adjacent to the respective function key.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

3.1.4 SERVICE SELECT KEYS

These buttons have no function in the Codax Embedded Terminal.



BRUSH WASH – No function



JET WASH - No function



VACUUM - No function



AIR - No function

3.1.5 ALPHA NUMERIC ENTRY KEYPAD

These keys allow the user to make numeric entries and edit text using an SMS Text message style text editor.



3.1.6 CONTROL KEYS



Delete or Cancel



Print – No function



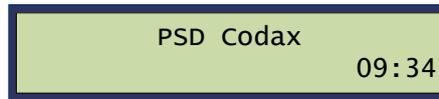
Submit or Confirm



Menu access

3.1.7 THE WELCOME SCREEN

The default welcome screen shows the PSD Codax header with the current time shown in the bottom right of the screen.



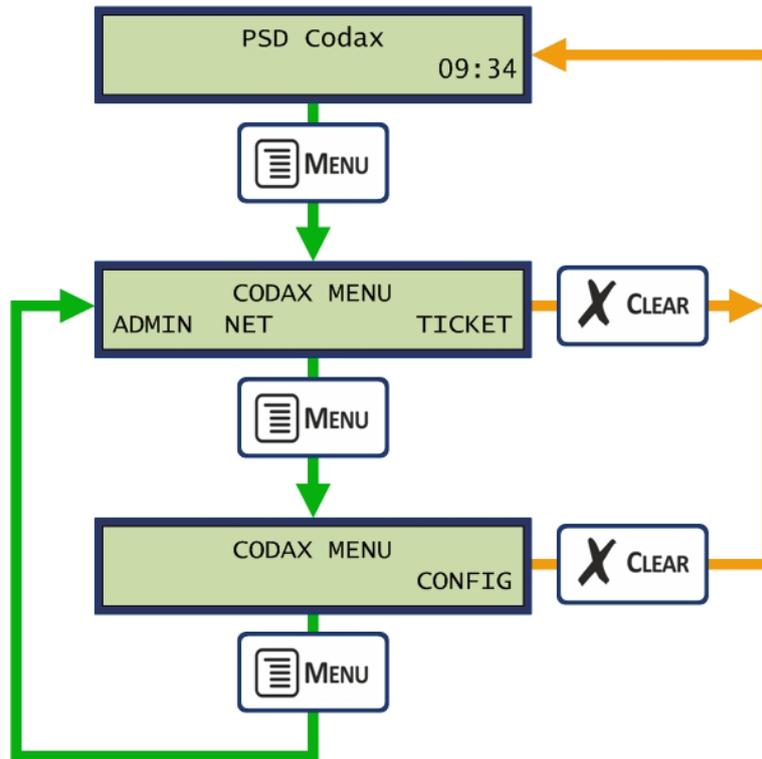
For welcome screen variations, see section 3.1.7 THE WELCOME SCREEN.

3.2 MENU ACCESS

3.2.1 THE CODAX MAIN MENUS

The Codax Menus are accessed by pressing the  key. Two main Menus are available as illustrated below.

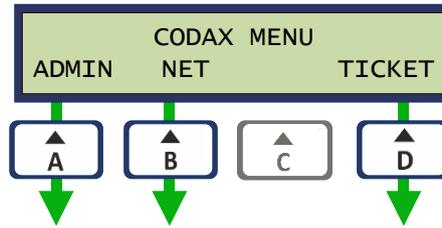
Pressing the  key at any time will return the operator to the welcome screen.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

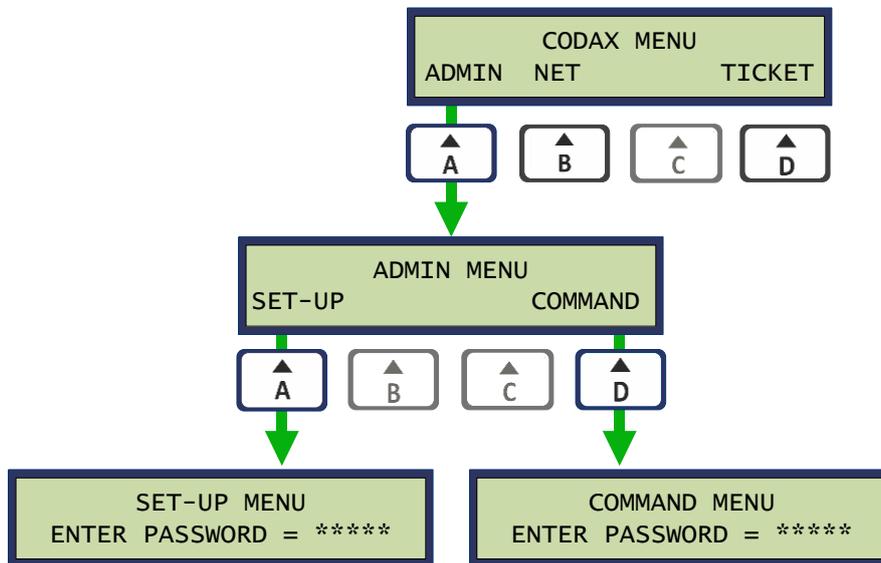
3.2.2 CODAX LEVEL 1 MENU

The first Codax Menu allows the Admin Menu to be accessed (ADMIN), the Network connection to be tested (NET) and the Ticket Menu to be accessed (TICKET).



Admin Menu

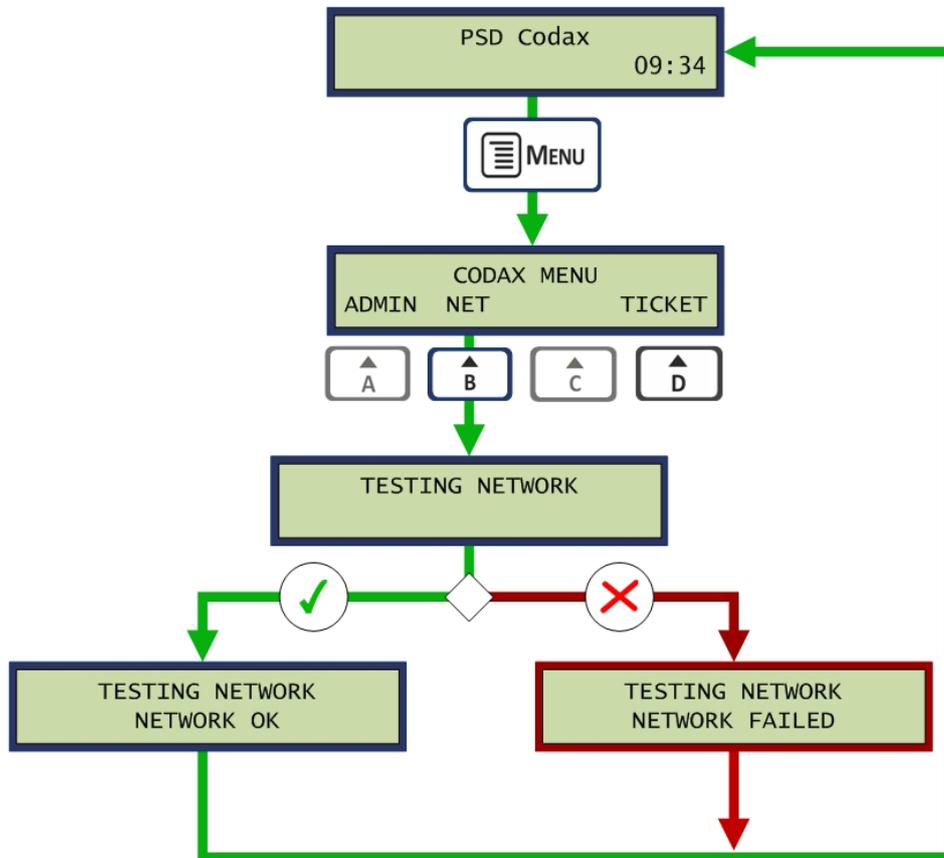
The Admin Menu provides access to the system configuration facilities. Both of these facilities require password entry to access. See section 4.1 - THE COMMAND MENU and 4.4 SYSTEM SETUP MENU, for more details.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

Test Network Connection

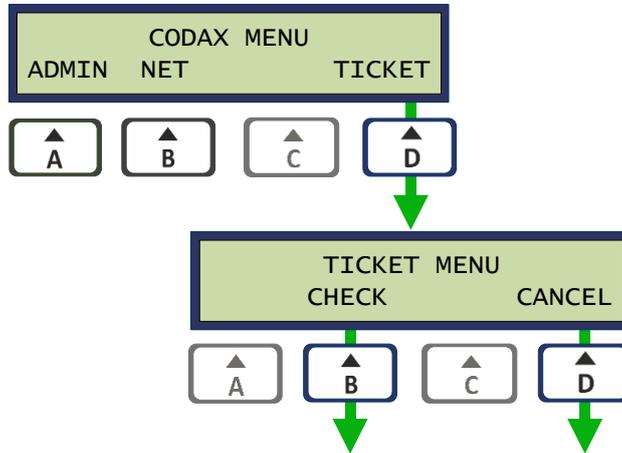
This function is only available if the Ethernet connection option is enabled. Selecting this option will test this connection.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

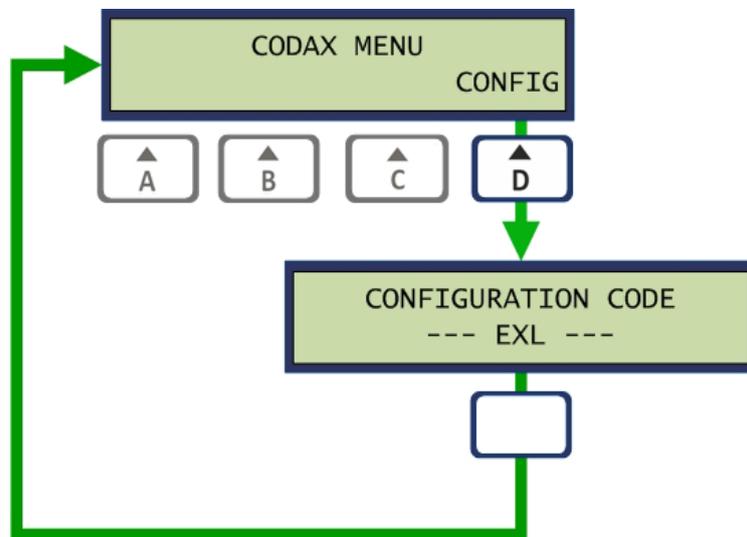
Ticket Menu

The Ticket Menu is available by selecting the TICKET option from the Codax Menu to allow the ticket check and clear facilities to be accessed. This facility allows the status of a ticket to be checked and provides the ability to cancel a ticket from the database so that it becomes invalid. This function is only available for systems operating in Ultra mode. Ticket checking for Retro mode is available at the Codax Access Terminal. See section 4.6 TICKET SERVICES.



3.2.3 CODAX LEVEL 2 MENU

The second Codax Menu has only one option (VERSION), to select show the software version. The version number is shown until any key is pressed.



The configuration code defines the factory set-up from the following:

- E – Ethernet
- X – Extended Database enabled
- L – Multi-Language option available

3.3 FUNCTIONAL OVERVIEW

3.3.1 TERMINAL CONFIGURATION

Cold Start Configuration

The Cold Start Configuration process configures the Codax System to meet the service requirements for a particular site installation. It allows the operator to define the services available as well as the number of programs available for each service. It also defines how each service connects to the system, either Ultra or Retro. The product of the Cold Start is the CAT setup codes used to align the CAT to the CET.

Cold Start Configuration is available via the Command Menu which requires the Engineer's password to access. See section 4.1 THE COMMAND MENU.

Warning: All outstanding unused tickets will be cancelled by this operation.

Reset Configuration

The Reset Configuration is similar to a Cold Start in that CAT setup codes are produced. The system is reconfigured to the previous Cold Start configuration and does not affect the system setup.

Reset Configuration is available via the Command Menu which requires the Engineer's password to access. See section 4.1 THE COMMAND MENU.

Warning: All outstanding unused tickets will be cancelled by this operation

System Setup

The System Setup is defined by a series of setup options available from the Setup Menu. These setup options fully customise the Ticket Terminal to the site operator's requirement.

The System Setup Menus are available from the Admin Menu and require the Manager's Password to access. See section 3.2.2 CODAX LEVEL 1 MENU.

Resetting Factory Defaults

The terminal may be returned at any time to its factory default setting using this function.

Resetting Factory Defaults is available via the Command Menu which requires the Engineer's password to access. See section 4.1 THE COMMAND MENU.

Warning: Following the Factory Reset a full configuration of the system including a Cold Start will be required.

Saving User Configuration

The user configuration is stored in Battery Backed RAM and protected by a Cyclic Redundancy Check (CRC). A second level of protection is provided by the removable E2PROM module. Changing the internal battery does therefore not destroy the current configuration.

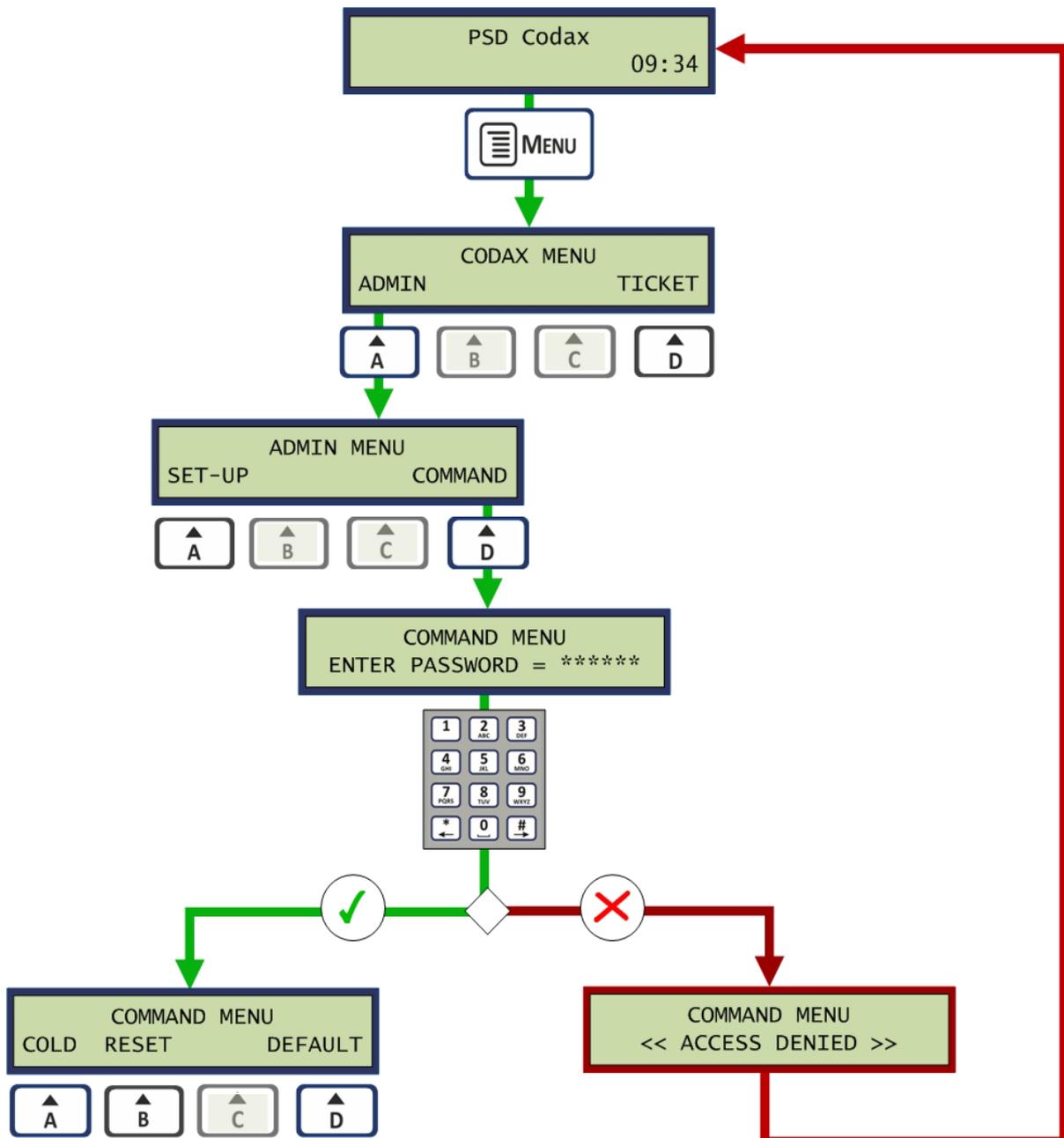
4 TERMINAL CONFIGURATION

4.1 THE COMMAND MENU

The Command Menu provides access to the system configuration facilities. These facilities are not normally available to the sales assistant and are therefore password protected.

The Command Menu is accessed by selecting the *COMMAND* option from the Admin Menu. Access to this Menu requires the Engineer's Password to be entered.

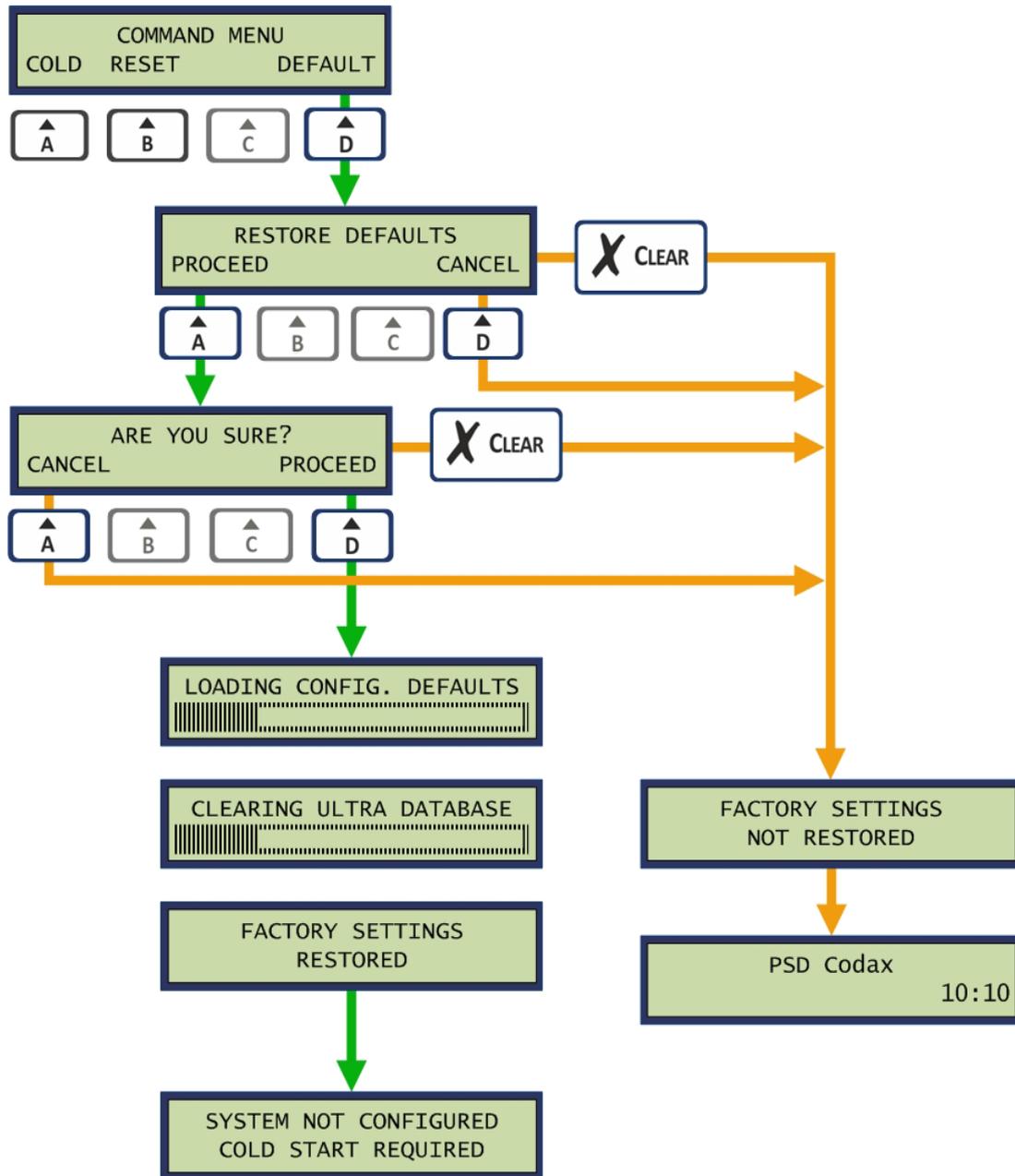
Engineer's Password 32923



4.2 RESTORING SYSTEM DEFAULTS

System configuration settings may be returned to their factory default setting by selecting the *DEFAULT* option from the Command Menu.

Warning: *This operation will overwrite the current configuration and a complete reconfiguration of the system will be required.*



4.3 COLD START

4.3.1 THE COLD START SYSTEM CONFIGURATION PROCESS

Cold Start is the process used to configure the Codax Ticket Terminal to match the forecourt services available for a particular site installation. Cold Start enables the services used and sets the number of programs available for each service. Cold Start also determines how the Codax Access Terminal controlling a service is connected, Ultra or Retro, and provides the set-up codes for those terminals.

The following service types are available:

Brush Wash	Automatic drive in car wash
Jet Wash	Hand held lance type wash bay
Vacuum	Vacuum service bay
Air	Tyre inflation service
Auxiliary	User definable service

A total of 31 system programs are available for distribution amongst the services available. The maximum number of programs available varies per service and is shown on the CET screen during the Cold Start process.

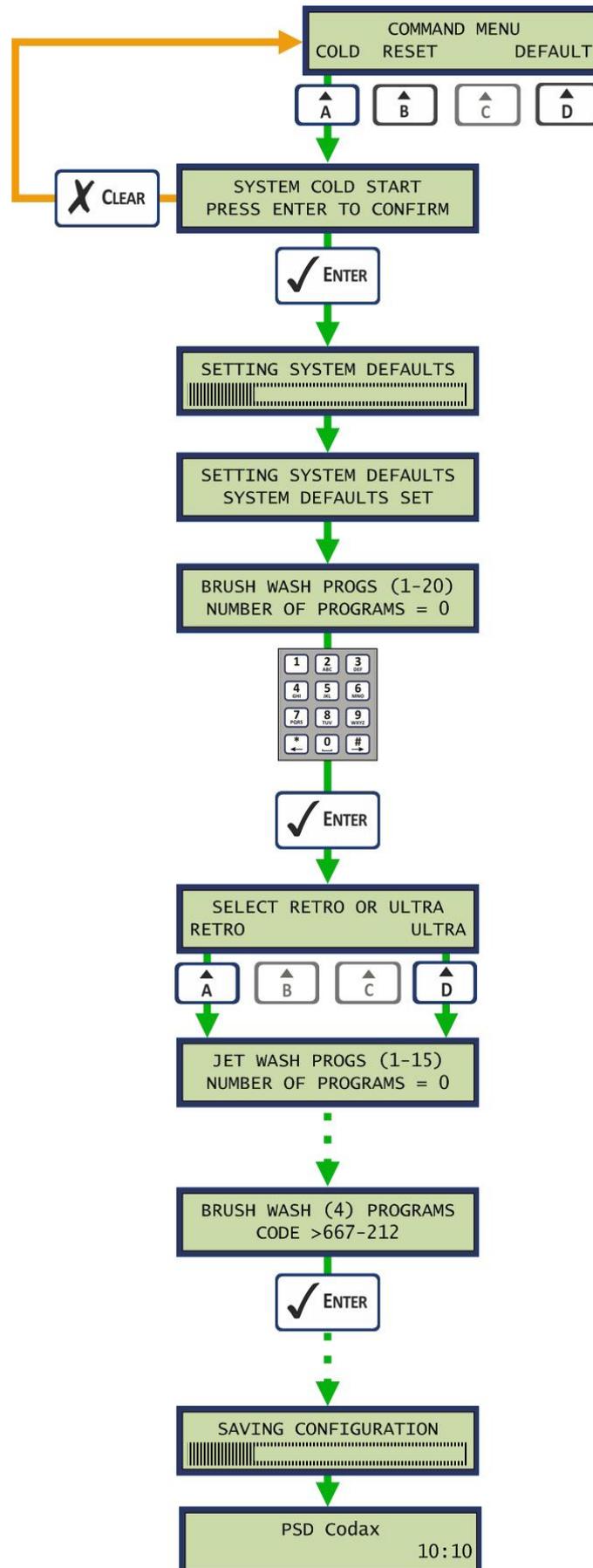
The Cold Start function is available from the Command Menu which requires the Engineer's password to access. See section 4.1 *THE COMMAND MENU*.

After Selecting and confirming the Cold Start option the Cold Start default settings are loaded. This process will clear the sales record and price tables – This may take a few minutes. Following this the configuration begins. The operator is stepped through each of the service types and the number of programs available for each service available is entered – or zero for services not available.

The operator also selects whether the service is operating in Ultra or Retro mode. After stepping through each service the configuration is saved and the System Configuration is shown on screen.

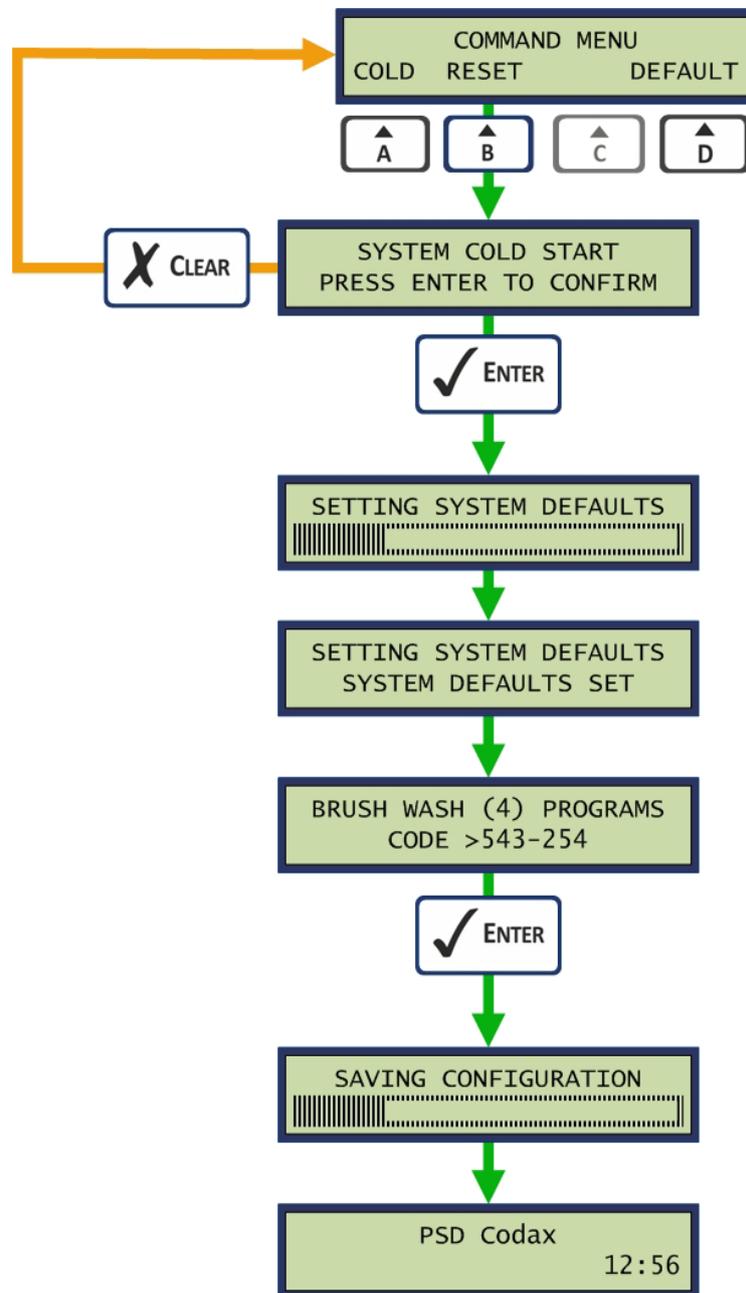
CODAX EMBEDDED TERMINAL OWNERS MANUAL

The following diagram illustrates the Cold Start Process.



4.3.2 RESETTING THE SYSTEM CONFIGURATION

The Reset system configuration allows a Cold Start reset of the system without changing the current configuration. As a result of this new system configuration codes are issued to reset and realign the Access Terminals.



4.3.3 ENABLING MULTI-USE TICKETS (ULTRA ONLY)

Multi-use offers discounts for a multiple use ticket. This ticket type is available for the Brush Wash service only. During the Cold Start configuration if the Brush Wash service is enabled in Ultra mode, the *Multi-use Discounts* option is presented. Selecting the *MULTI* option from the Select System Type menu will enable this option. Selecting *SINGLE* will disable Multi-use.

Two operational modes are available:

In *NORMAL* mode, 5, 10 or 15 use tickets are available with validity of 5, 10 and 15 weeks respectively.

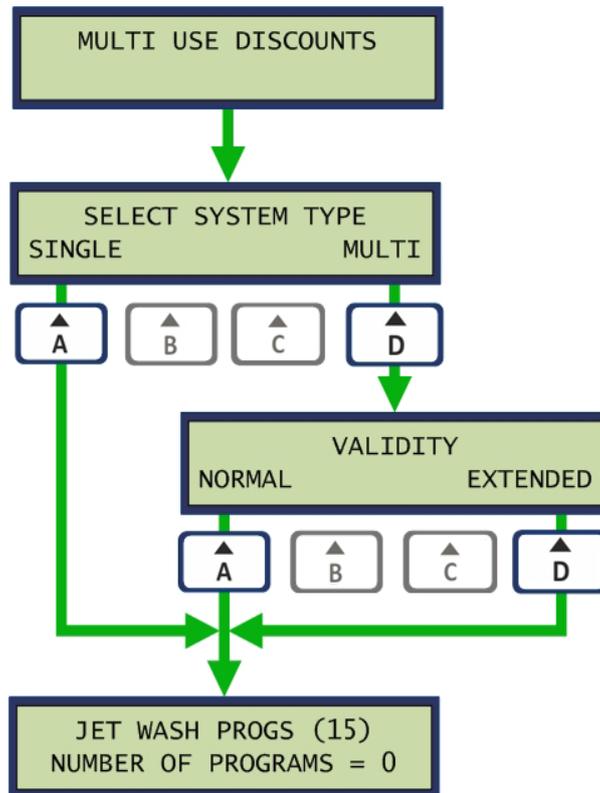
In *EXTENDED* mode, a 5 use ticket is available with a validity of 15 weeks.

Multi-use discounts are defined from the *Price* option in the Set-up menu. See section 4.6.5 *PRICES*.

Note: When using Multi-use tickets, the validity of single-use ticket is restricted to a maximum of seven days.

Note: The multi-use option is only available for the Fast Serial, Legacy Serial and Codax Serial protocols.

Below is a section of the Cold Start Process, detailing the Multi-use selection.

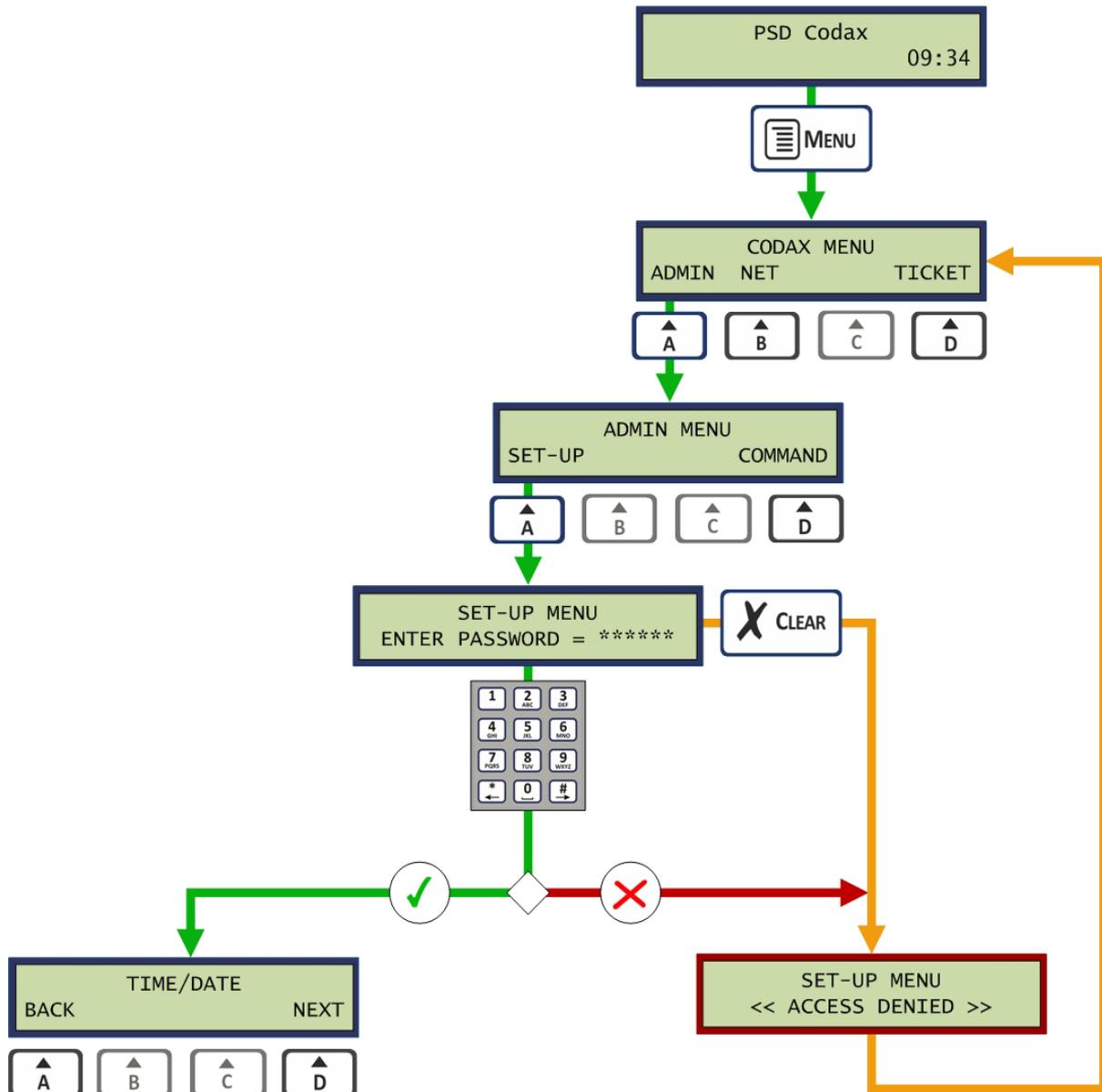


4.4 SYSTEM SETUP MENU

4.4.1 ACCESSING THE SETUP MENU

The *System Setup Menu* is accessed by selecting the SET-UP option from the Admin Menu. Access to this menu requires the Managers Password to be entered.

Managers Default Password 12345

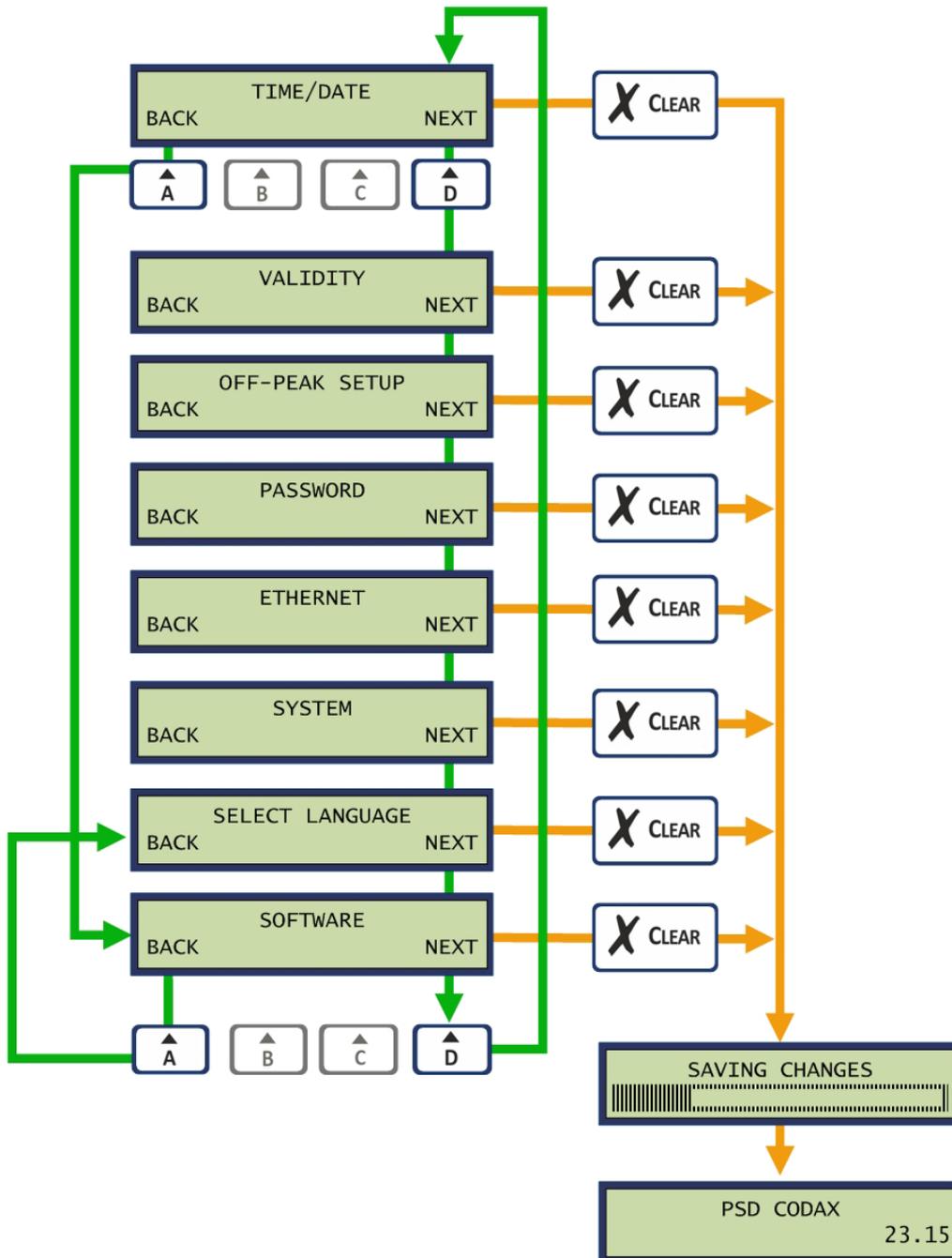


CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.4.2 NAVIGATING THE SETUP MENUS

The Setup Menus are navigated using the option A and D keys to step through the options. The Enter key is pressed to select and edit the option shown. The Clear key may be pressed at any time to exit the menu and save any changes made.

Note: Some of the items in the following header list are optional and not available for certain installations.

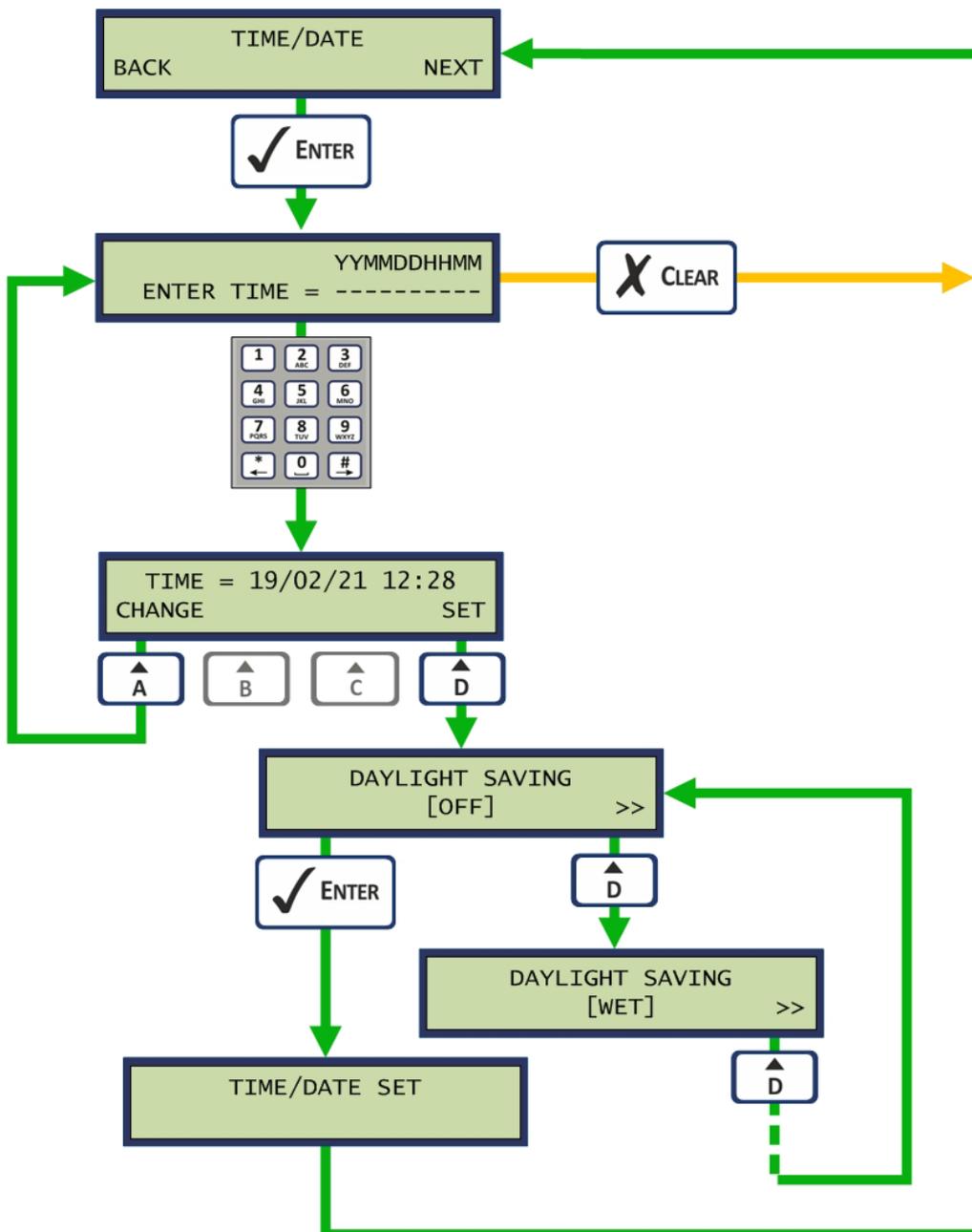


4.5 SETUP MENU FUNCTIONS

4.5.1 TIME AND DATE

The *Time/Date* function allows the current time and date to be adjusted. Date and Time is entered in the order: Year/Month/Day/Hour/Minute. Times are entered in 24 hour format. The automatic daylight saving zone may be selected or turned off. The following zones are included:

- OFF No daylight saving adjustment
- WET Western European Time
- CET Central European Time
- EET Eastern European Time
- USA United States of America
- AUS Australia
- NZL New Zealand

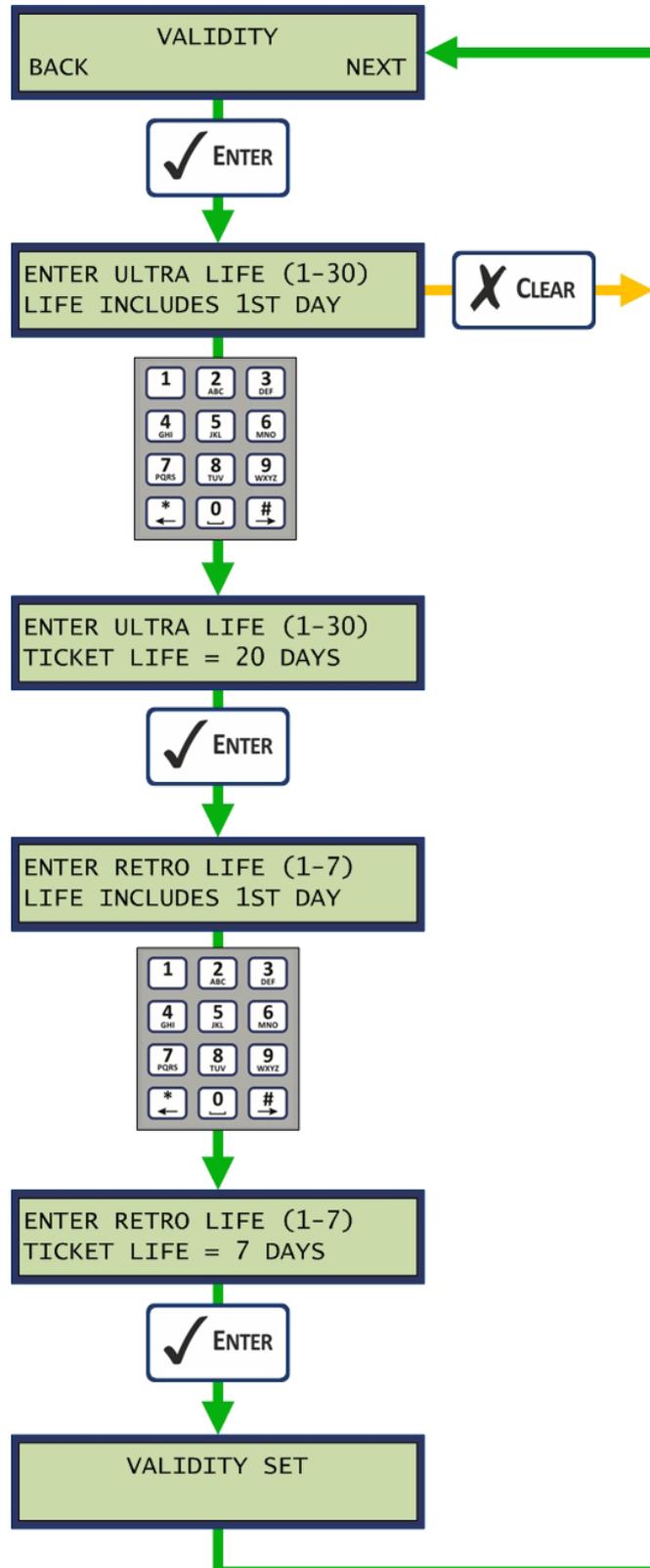


CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.5.2 VALIDITY

The *Validity* function sets the number of days that a single ticket is valid for. Separate entries are made for Ultra and Retro.

Note: If Multi-use tickets are enabled, single ticket life is restricted to a maximum of 7 days.



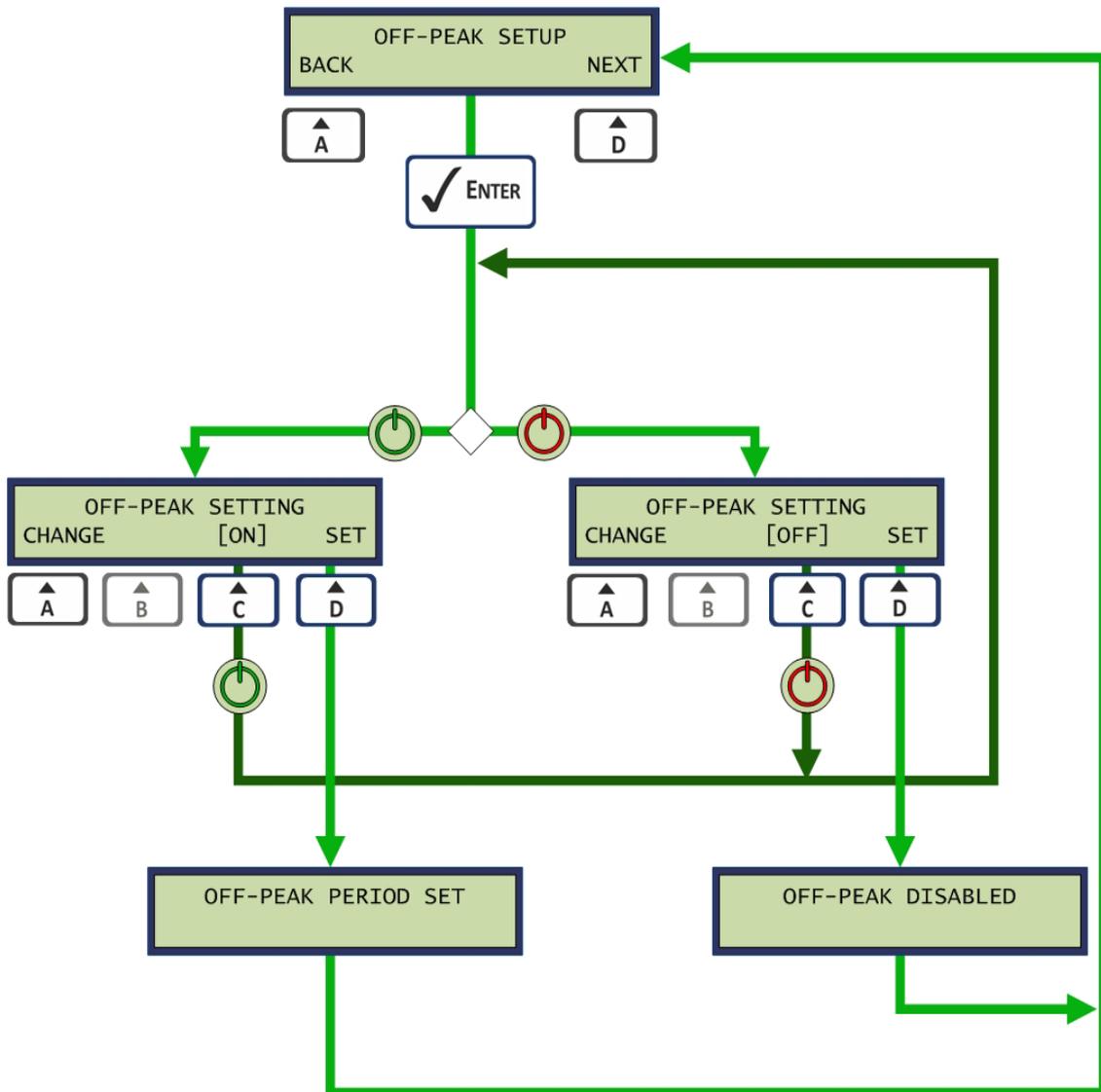
CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.5.3 OFF PEAK SETUP

The *Off-Peak Setup* function allows a site to offer discounted prices for off-peak or low volume times of the week. Here the start and end times are set as well as the days of the week when the offer is valid.

Note: This feature is specified as an Ultra-function only. Off-Peak is available for Retro also but off-peak settings are entered at the Access Terminal. See Codax Access Terminal manual for details.

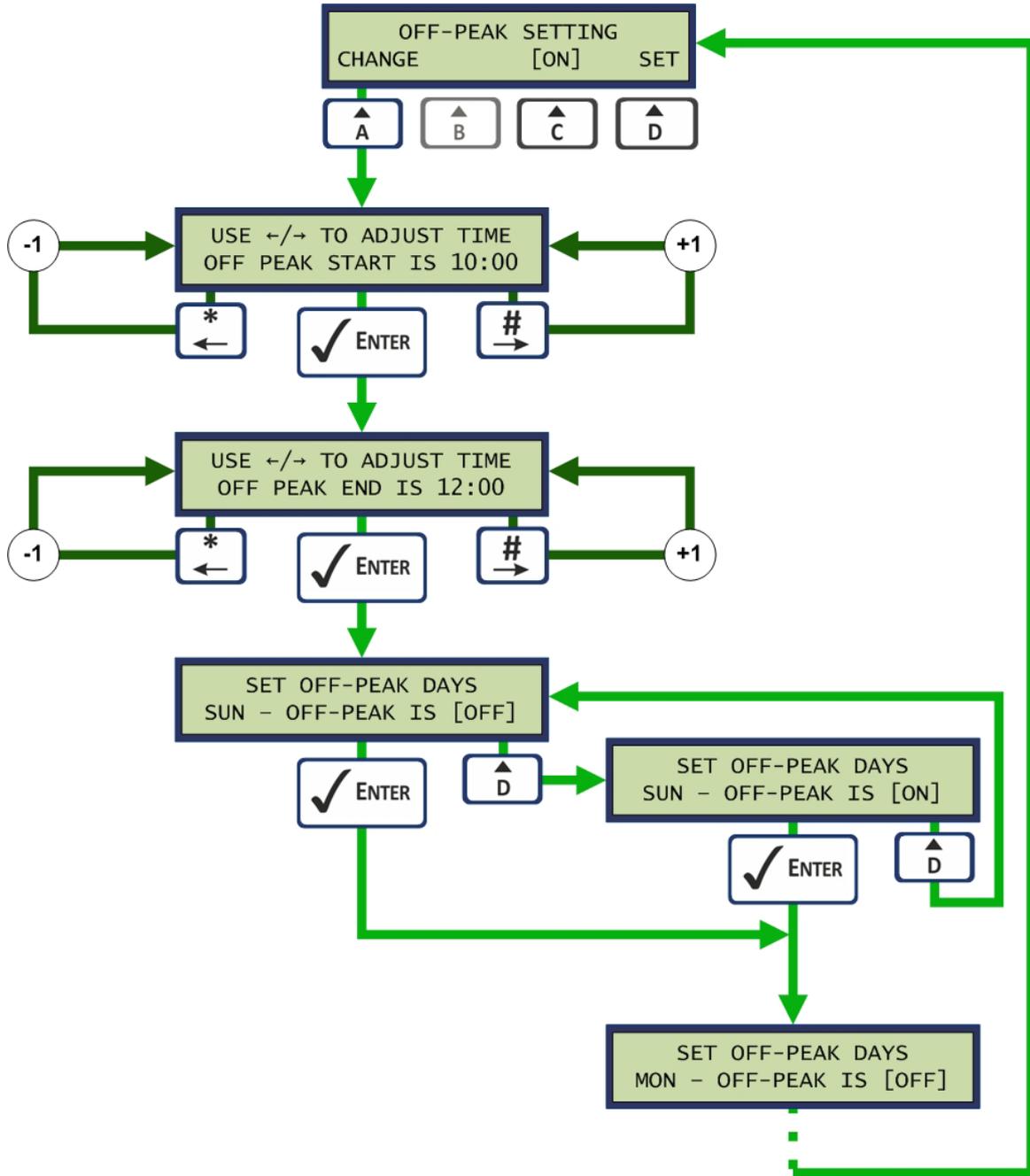
Note: This function is only available if the POS has been programmed to do so. Otherwise this function should be left disabled.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

Changing Off-Peak Times

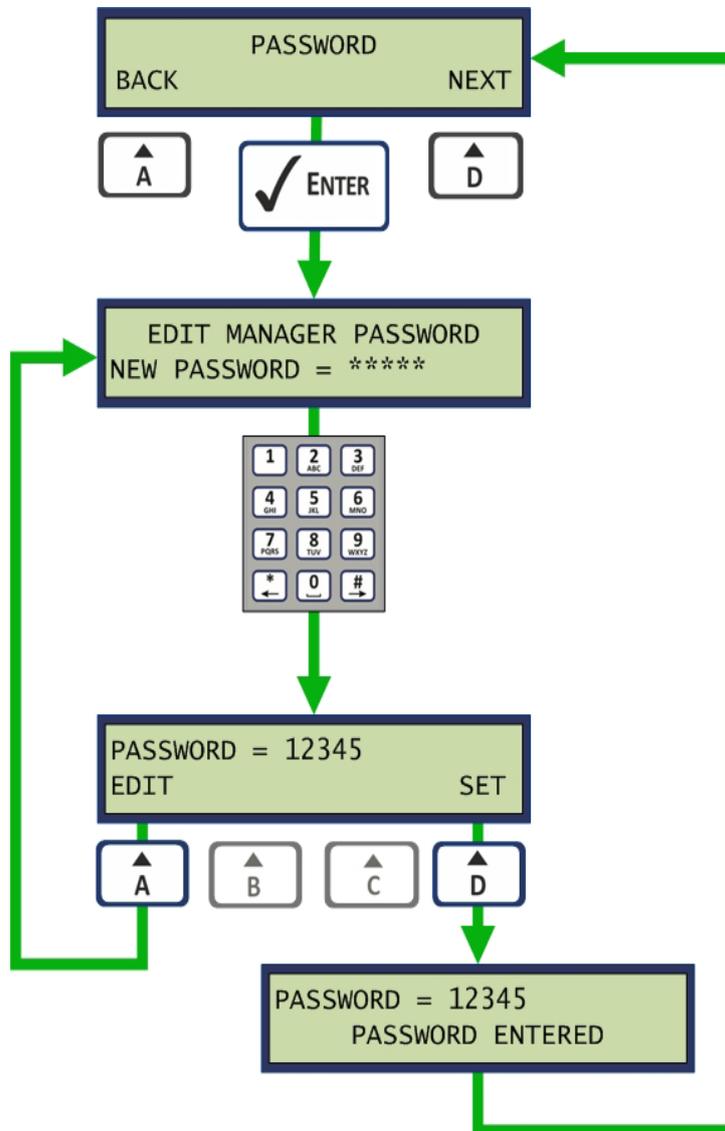
The *Off-Peak* period start and stop times are set using the * ← and # → keys. Each day of the week may then be enabled or disabled to operate the off-peak facility.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

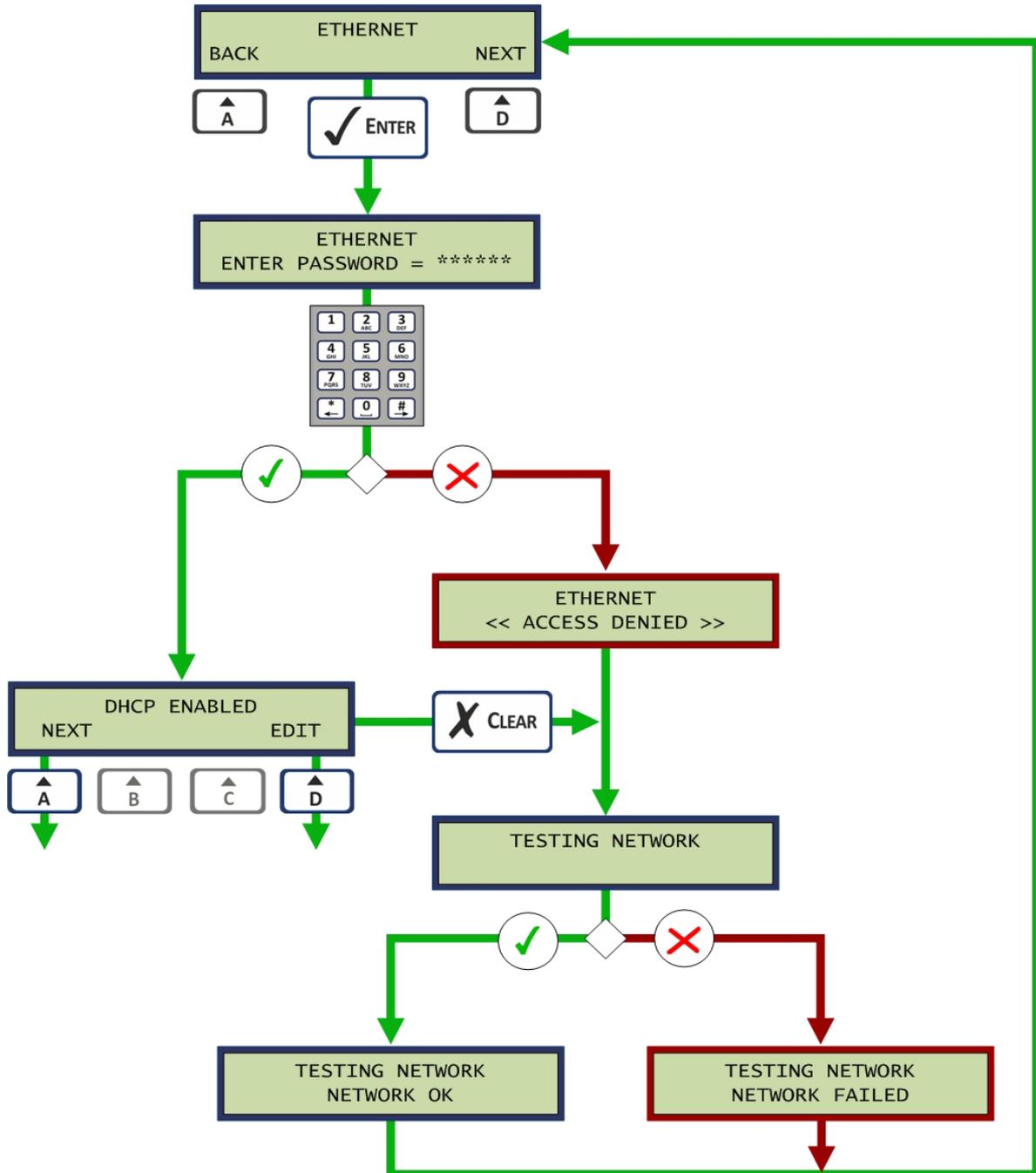
4.5.4 PASSWORD

The *Password* option allows the Manager's password to be edited. The Manager's password is required to access the setup menus.



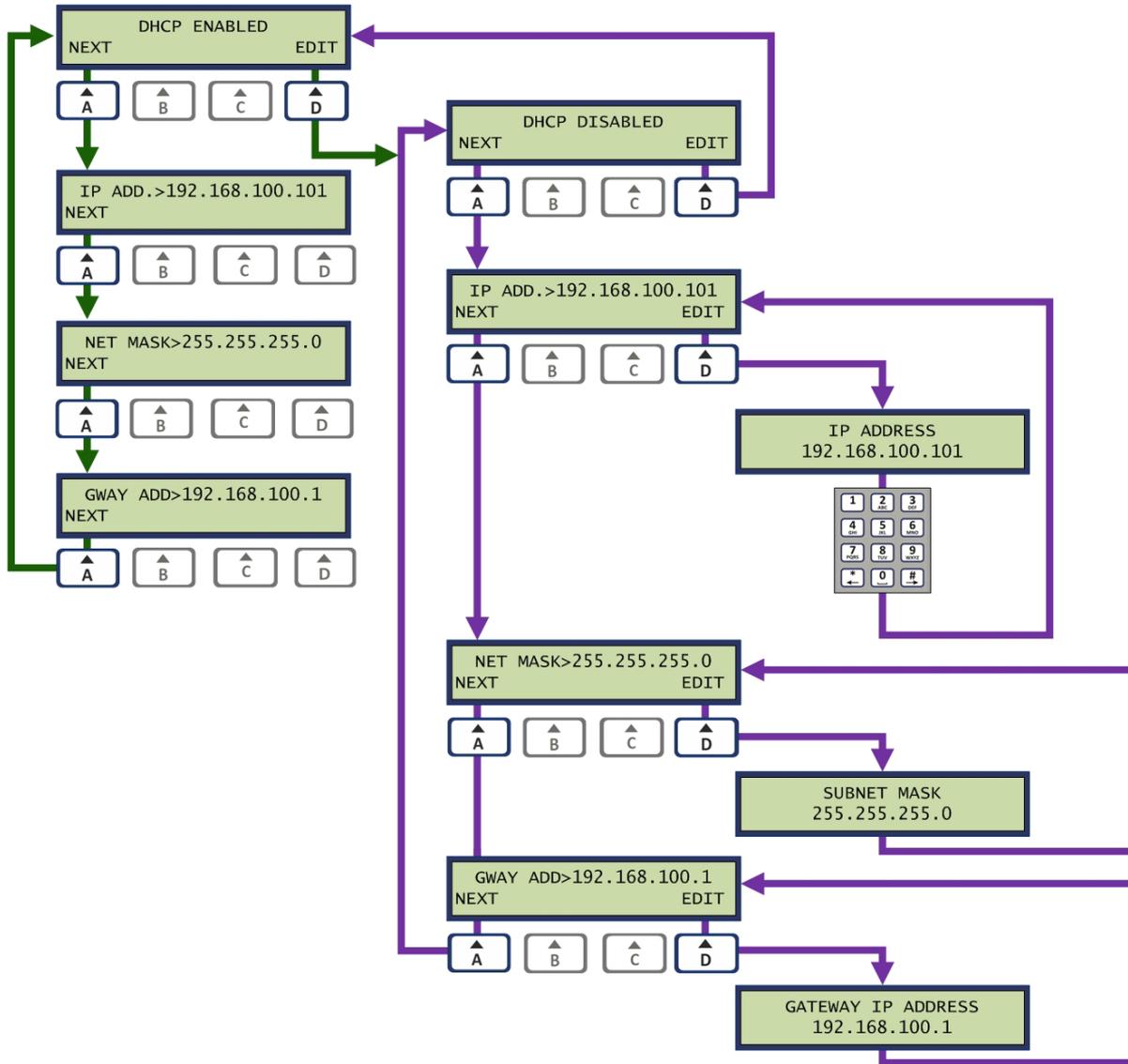
4.5.5 ETHERNET

The *Ethernet* option allows the operator to set a fixed IP address or allow automatic selection using the DHCP server. To adjust the Ethernet connection settings the Engineer's password is required. On completing the setting the network is tested.



CODAX EMBEDDED TERMINAL OWNERS MANUAL

If the DHCP option is enabled the operator can step through the settings. If DHCP is disabled the IP address, Subnet mask and Gateway IP address are entered.

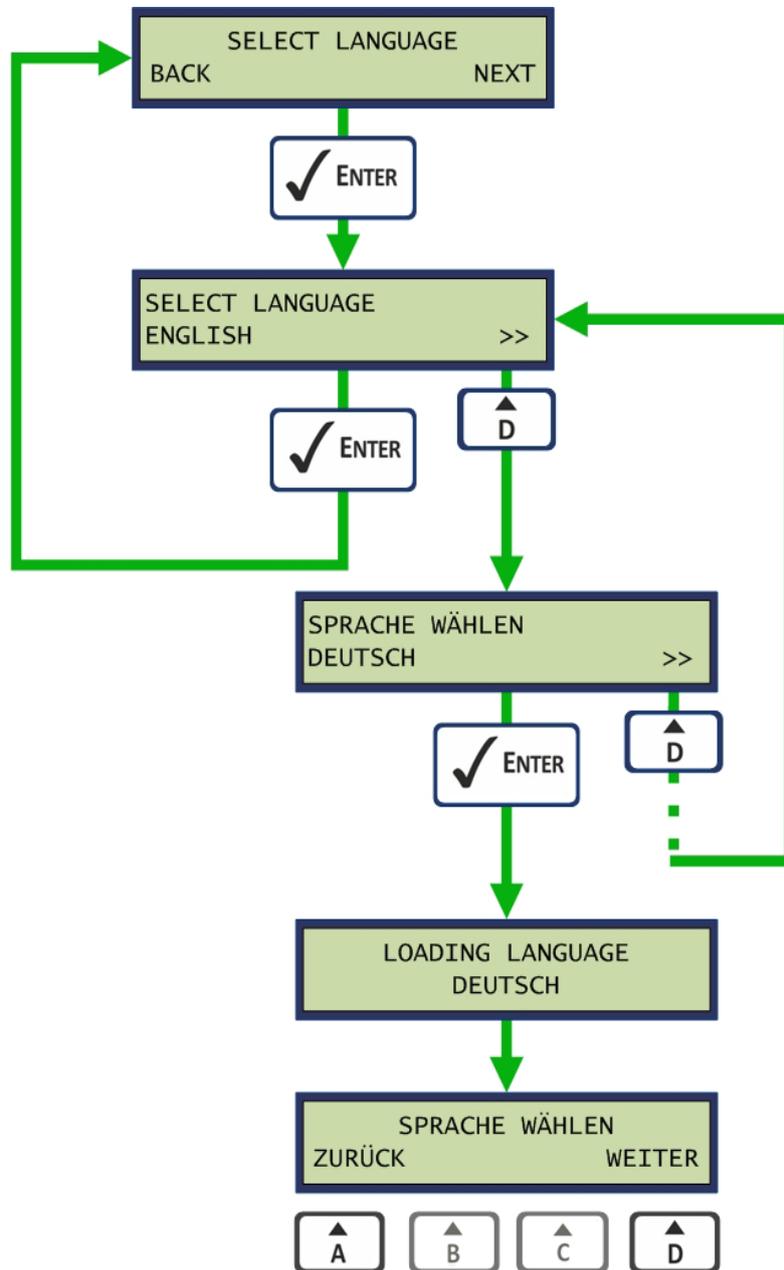


Note: CET requires a power cycle after changing the IP Address.

4.5.6 SELECT LANGUAGE

OPTIONAL UPGRADE

The *Select Language* option allows the language for which all on screen messages are displayed. Language variations are contained in the removable E2PROM module and are factory defined. Languages available vary and are based on geographical regions.

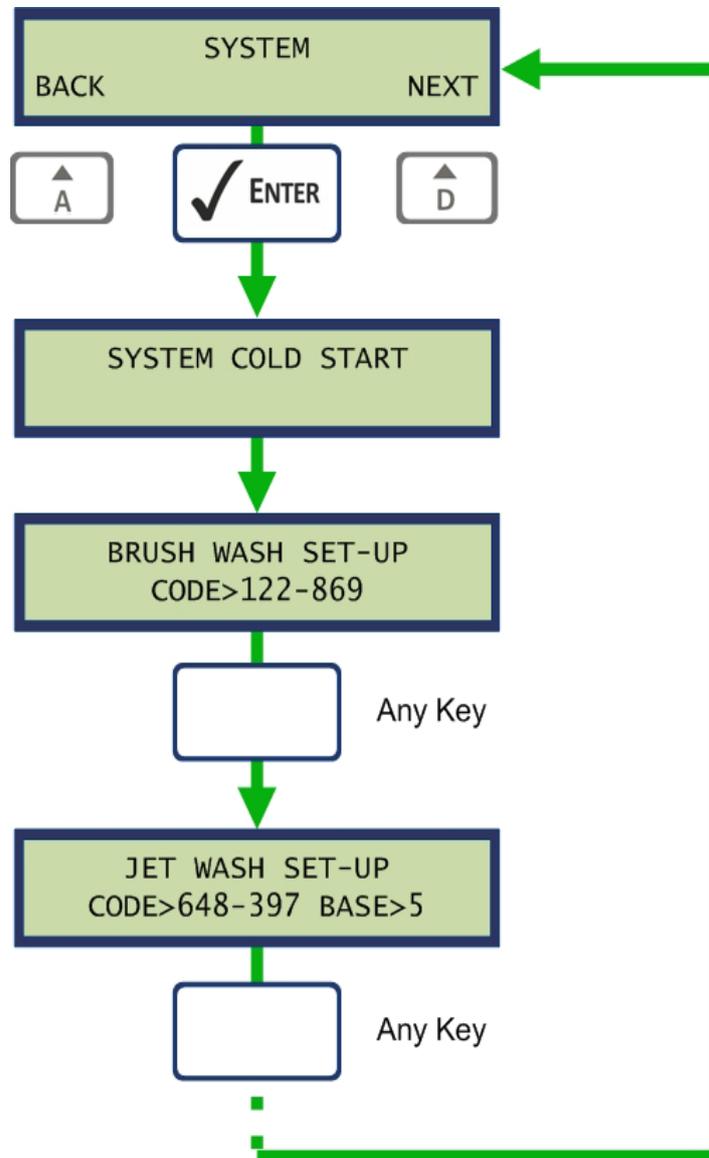


CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.5.7 SYSTEM

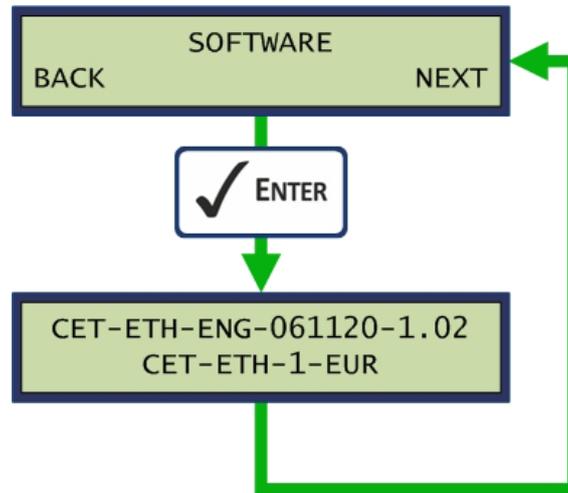
The *System* option allows the System Configuration to be shown. The numbers shown are the CAT Setup Codes and Program Base values used to align the CAT to the CTT during Cold Start.

The following illustration shows an example of the System option sequence.



4.5.8 SOFTWARE

The *Software* option displays the software version of the CET firmware and the E2PROM memory module.

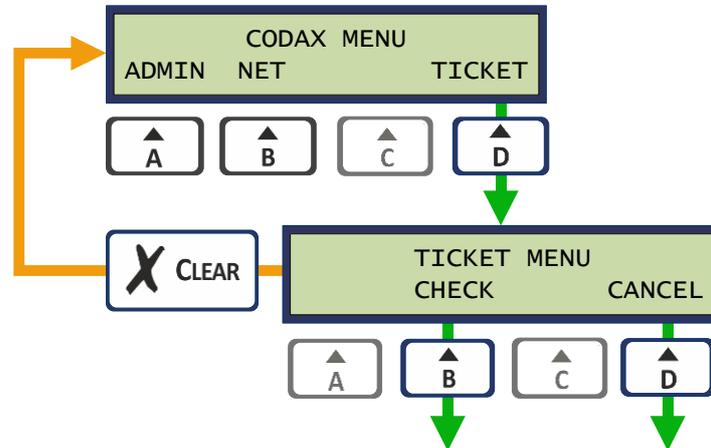


4.6 TICKET SERVICES

Ticket services are available for Wash services operational in Ultra Modes only.

4.6.1 THE TICKET MENU

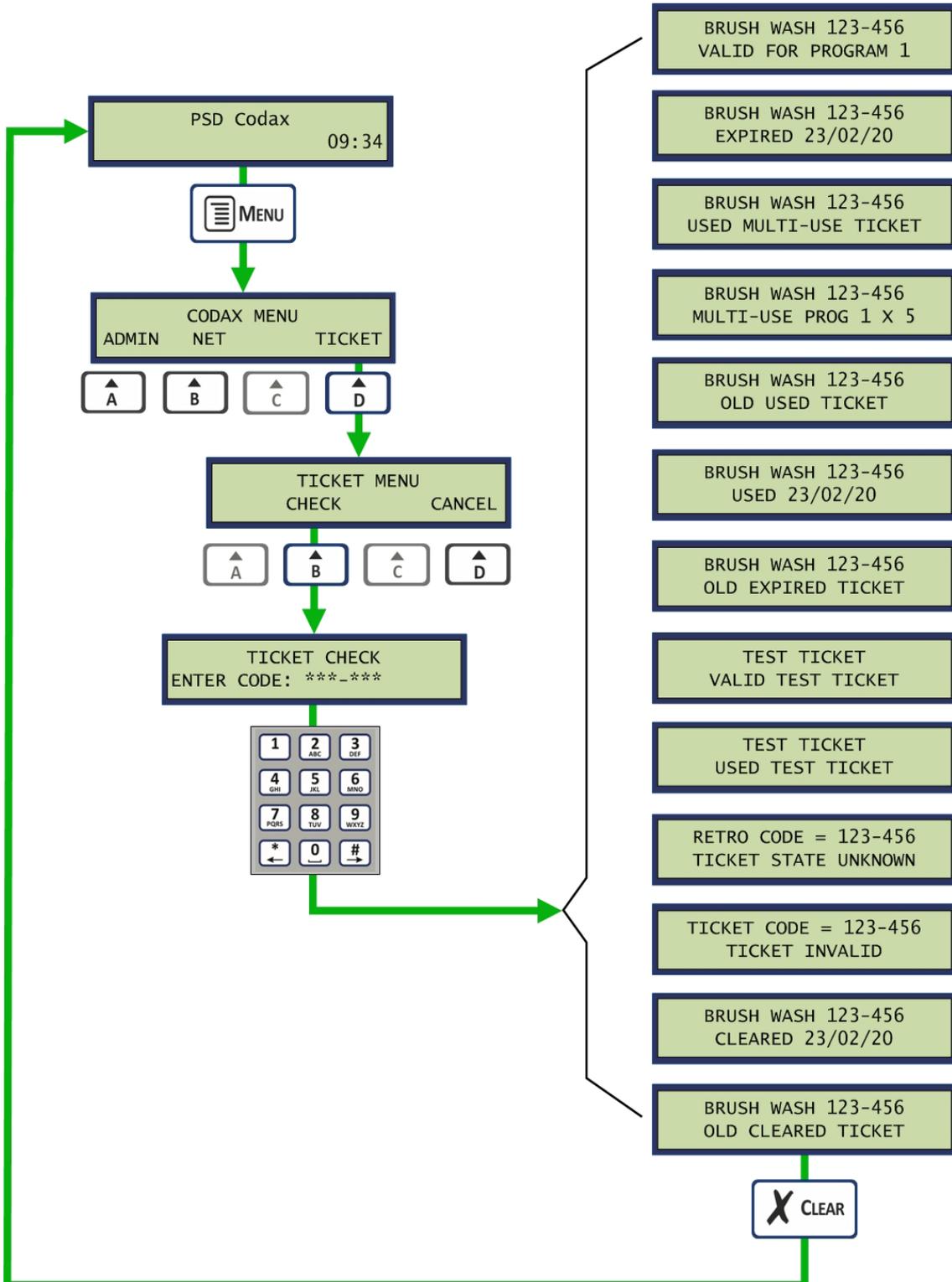
The *Ticket Menu* is available from the *TICKET* option in the *Codax Menu*. From this Menu the *CHECK* option selects the ticket check function and the *CANCEL* option selects the clear ticket function.



4.6.2 CHECKING TICKETS (ULTRA ONLY)

The *Ticket Check* facility allows a Codax coded ticket to be checked for its current status. This facility is available for service connected in Ultra mode only.

The following illustration shows this sequence and all the possible result messages.

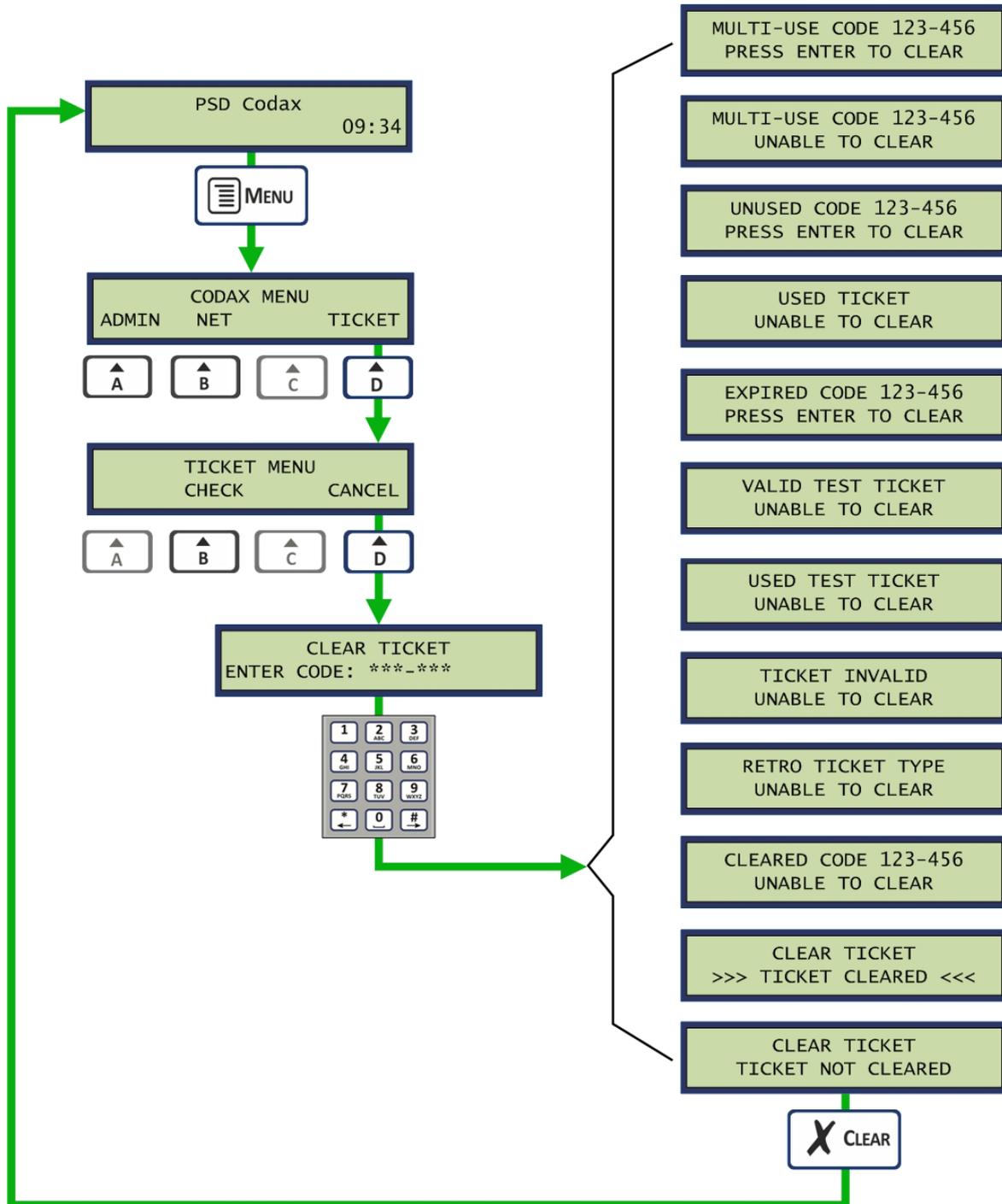


CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.6.3 CANCELLING TICKETS (ULTRA ONLY)

The *Ticket Cancel* facility allows a Codax coded ticket to be cleared from the database and therefore not accepted at the Codax Access Terminal. This facility is available for services connected in Ultra mode only.

The following illustration shows this sequence and all the possible result messages.

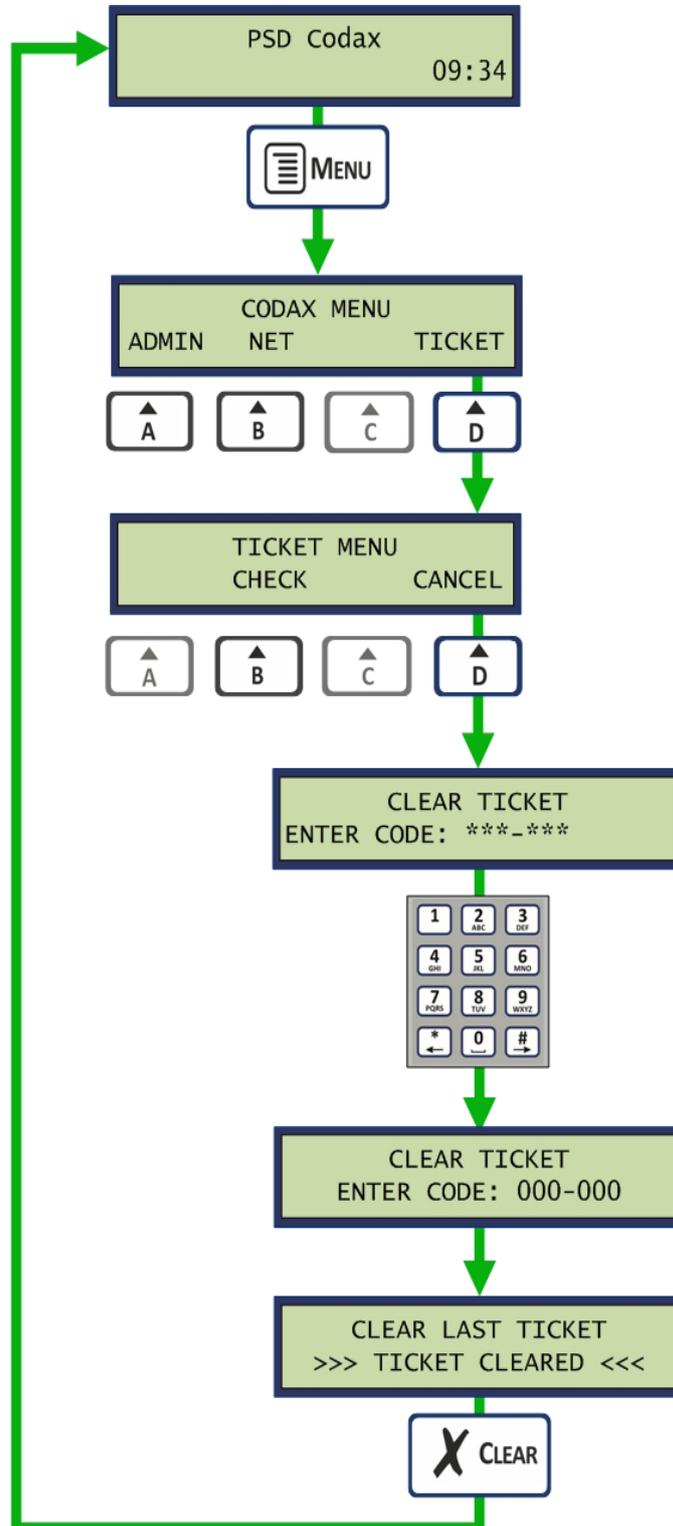


CODAX EMBEDDED TERMINAL OWNERS MANUAL

4.6.4 CANCELLING THE LAST TICKET ISSUED (ULTRA ONLY)

The last ticket issued may be cancelled by entering code 000-000. This sequence is illustrated below. This facility is available for service connected in Ultra mode only.

Note: Other results are possible. See section 4.6.3 - CANCELLING TICKETS.



5 TROUBLE SHOOTING

5.1 CODAX SYSTEM FAULT CODES

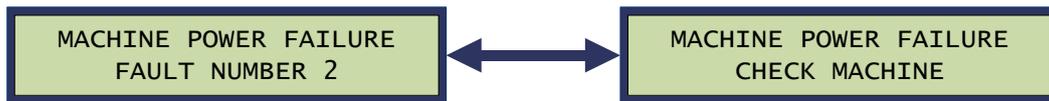
5.1.1 FAULT CODE 1 – MACHINE LINK ERROR (ULTRA ONLY)

The Machine Link refers to the cable connecting the CAT to the Machine. Specifically the signal wire or wires controlling the machines operation. If a problem is detected when a wash is started, the Machine Link fault is reported. The following message screens alternate at the CAT until cleared by the operator by pressing the  key.



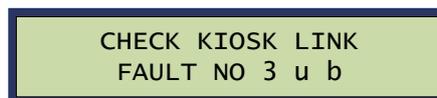
5.1.2 FAULT CODE 2 – MACHINE POWER FAILURE (ULTRA ONLY)

This fault is reported by the CAT when the power indication from the Machine is lost. The following message screens alternate at the CAT until the power indication is restored. The fault display automatically clears and normal operation is resumed.



5.1.3 FAULT CODE 3 – KIOSK LINK FAILURE (ULTRA ONLY)

If a fault is detected by the CAT during communication with the CET the Kiosk Link fault is reported. The following fault screen is shown at the CAT until cleared by the operator by pressing the  key.



Additional information on the nature of the fault is indicated by the following letter codes:

- u No Loop Error
- b Kiosk Link Break error
- p Kiosk Link Poll error
- a Kiosk Link Acknowledge error
- r Kiosk Link Reply error
- t Kiosk Link Try's error
- k Access Code Entry (2368)

*Note: Entering Access Code **2363** at the CAT will test the Kiosk Link. See Codax Access Terminal Operators Manual for details.*

5.1.4 FAULT CODE 4 – KEYPAD FAULT (ULTRA ONLY)

This fault is reported by the Access Terminal when a suspected keypad fault is detected. The fault occurs when an unrecognisable code is entered a number of times at the CAT. This may be due to a faulty keypad but could also be caused by random code entry in an attempt to overcome the system. The keypad fault in this instance is designed to deter such action.

KEYPAD FAULT 4

Note: This fault is automatically cleared from the Access Terminal after a few seconds

5.1.5 FAULT CODE 5 – ACCESS LINK ERROR (ULTRA ONLY)

The access link error indicates that there is a problem with the Ultra communication link from CET via the Codax Distribution Unit to the CAT. The CDU LED indicators may indicate which channel is causing the problem.

FAULT CODE 5
ACCESS LINK ERROR

Ultra Link Fault

This is the connection from the CET to the CAT via the Codax Distribution Unit. It is normally caused by a break in the communication cable. The series of CDU LED indicators will show which CAT cable is causing the problem. See *Section 5.2 - CODAX DISTRIBUTION UNIT LED INDICATORS*.

5.2 CODAX DISTRIBUTION UNIT LED INDICATORS

5.2.1 CODAX DISTRIBUTION UNIT POWER INDICATION

The yellow LED is a power indicator. The normal condition of this LED is ON. The LED OFF indicates a loss of power due to a short circuit or overload. CAT and CET power outputs from the CDU are protected by thermal fuses. An overload on these outputs will cause the fuse to overheat and shutdown.

Note: These fuses automatically recover when the fault condition clears. No user serviceable parts are fitted to this unit

-  LED On - Power ON
-  LED Off - Power OFF

5.2.2 CODAX DISTRIBUTION UNIT SIGNAL INDICATION

The red LED is a communication link indicator. The normal condition of this LED is off. The LED may flash on when the Ticket Terminal is communicating with an Access Terminal. A loss of communication is indicated by the LED remaining on. This fault is normally caused by a break in the cabling to the CET or CAT.

-  LED On - Connection error
-  LED Flashing - Normal comms indication
-  LED Off - Normal operation

6 CONTACT INFORMATION

Codax™ is designed and manufactured by PSD Codax Ltd.
Bristol, England, BS14 0BY

Full Address:

PSD Codax Ltd
Axis 8
Hawkfield Business Park
Whitchurch
Bristol
BS14 0BY
England

PSD Codax website: www.psdcodax.com

For product information, pricing or to place an order:

Email: sales@psdcodax.com

Call: +44 (0) 1275 866910.

For technical support:

Email: service@psdcodax.com

Call: +44 (0) 1275 866910.

Notices

PSD Codax Limited operate a continued product and component development programme. We reserve the right to modify/change as necessary. All technical specifications, Codax system software and information documents produced by PSD are copyright protected. Written permission is required from a Director of the company prior to any reproduction.

We may send you software by electronic mail, you are only authorised to make one copy of this software image onto an EPROM/Software module after which the software image must be deleted from your computer. Any development software sent electronically to you for the purpose of testing and development is for this purpose only and any reproduction or operational use of the software is not permitted and will be in breach of our copyright and trading terms.

PSD Codax Ltd. is registered C/O Bryan Cave Leighton Paisner LLP, Adelaide House, London Bridge, EC4R 9HA. Company number 04204089.

Our standard terms and conditions of trading and payment will apply to all transactions. Please request current issue.



To learn more about PSD Codax,
our services and our products,
please contact us.

t: +44 (0) 1275 866 910
w: www.psdcodax.com
e: info@psdcodax.com

Defining the World of Car Wash Technology

Smartstart Plus | Smartstart Pro | Auto Sentry® Petro | Auto Sentry® Flex | Auto Sentry® CPT | WashConnect®

