FAIRBANKS SCALES

Operator Manual

Fairbanks Access Solutions

Model: AN Series powered by Titan Technology

51299
Rev. 1 **01/13**

Amendment Record

Fairbanks Access Solutions

Model: AN-Series powered by Titan Technology

Document 51299

Manufactured by Fairbanks Scales Inc.
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Kansas City, Missouri 64106

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Section 1: General Information

1.1. Brief Overview

Fairbanks Access Solutions system controls entrance/exit of vehicles hauling materials in/out of a facility. The Access Solutions system contains 1 or more Access Terminals and a data processing system (i.e. MatreX).

VEHICLE WEIGHING PROCESS ORDER

1. Vehicle drives onto a scale (provided by customer).
2. Vehicle is identified through 1 of 3 options: short/long range RFID reader, card, or a manual process where the customer enters a code on Access Terminal.
3. MatreX looks up vehicle information and sends it to the Access Terminal.
4. Vehicle is processed based on specific vehicle weighing process information.
5. Terminal receives vehicle weight from scale indicator (provided by customer).
6. Weight data and customer responses are sent to MatreX.
7. If transaction is complete, customer receives a detailed scale ticket receipt.

SAMPLE TRANSACTION PROCESS SCENARIOS

Fairbanks Access Solutions processes vehicles in multiple ways through weight:

Processing by Weight

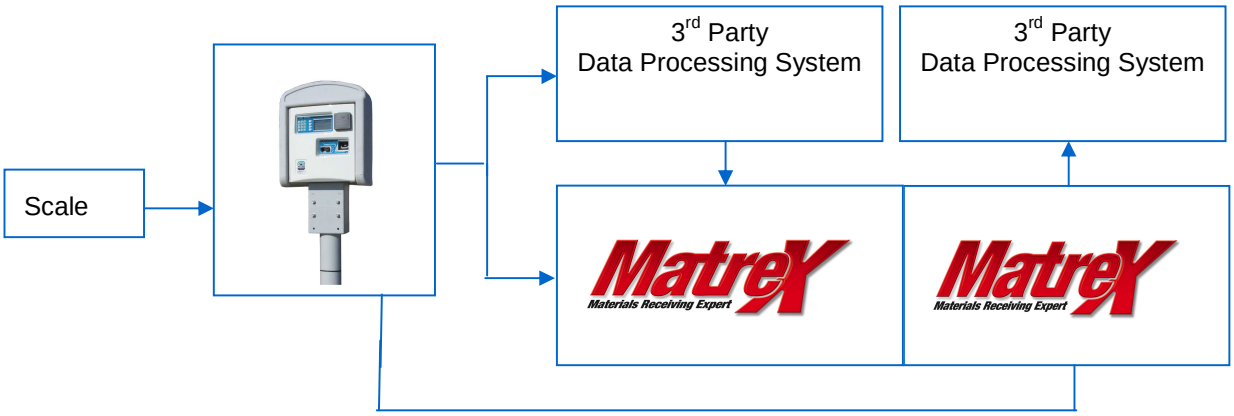
- Weigh In and Weigh Out: Truck weighs entering the facility and weighs exiting the facility, 2 weighments
- Weigh In w/ Stored Tare Weight: Truck weighs entering the facility then exits facility, 1 weighment
- Weight Out w/ Stored Tare Weight: Truck enters facility then weighs exiting facility, 1 weighment
- Multiple Weighs: Mixed load vehicles are weighed multiple times while at the facility

GROSS WEIGHT (full weight)	=	VEHICLE WEIGHT	+	MATERIAL
TARE WEIGHT (empty weight)	=	VEHICLE WEIGHT		
NET WEIGHT (material weight)	=	GROSS WEIGHT (vehicle + material)	-	TARE

Gross, Tare, & Net Weight Relationships

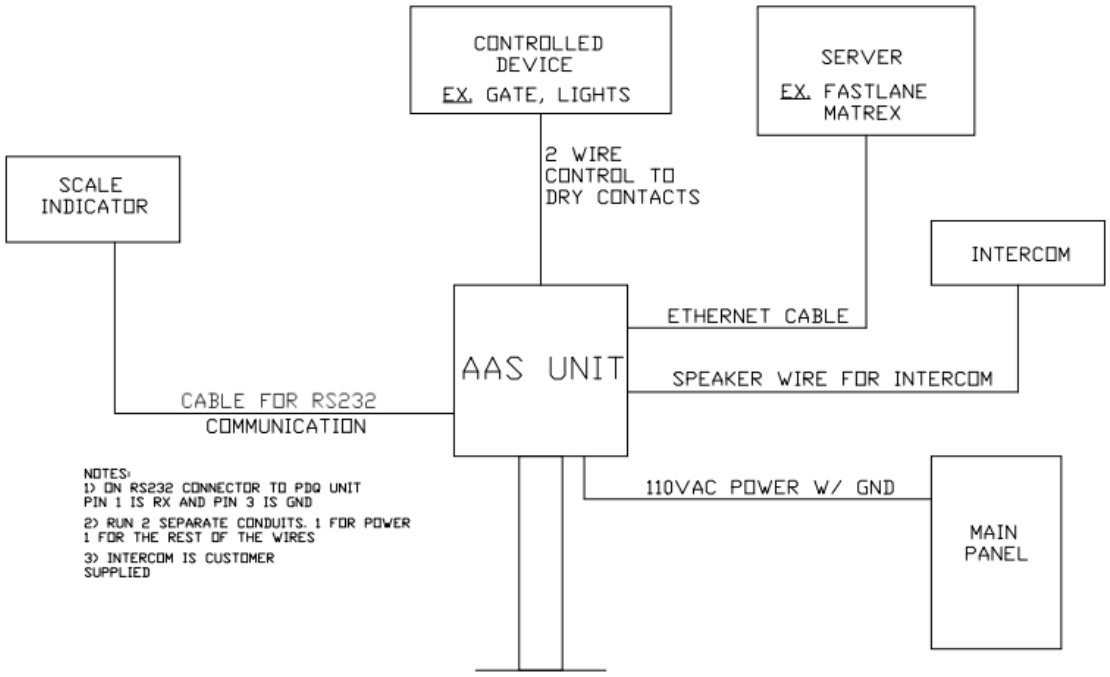
1.2. System Configurations

Fairbanks Access Solutions is configurable in multiple ways:



Note:

If using a 3rd party data processing system custom software integration, additional software installation will be required.



1.3. Features

- Various Mounting Options and Contemporary Design
- Easy Maintenance
- Replaceable Keypad
- Short-Range/Long Range RFID Reader
- Custom Inputs (start transaction, detect vehicle)/Outputs (lights, gates)
- Magnetic Card Reader
  - Provides users with card success or failure status through audio sounds and assistance
  - Jam proof operation, provides clear and safe path for entering debris and/or water

- Electrical System
  - Modular design allows for multiple component replacements.
  - Protects against damage and operational problems during low power and/or lightning storms.
  - Battery Backup System providing 12VDC battery power during power loss. (2 weeks if fully charged)
  - Climate Control System
  - Provides continuous air and heat circulation to internal Access Terminal devices

1.4. Safety Guidelines

- Any personnel operating or performing maintenance on the equipment must read and adhere to all safety and machine operating instructions
- When installing or operating a piece of Fairbanks Access Solutions equipment, adhere to all fire and safety rules/regulations, per local, state, and national authorities; consult local code authorities for additional information
- The equipment must be maintained and operated only by competent personnel. The user must operate appropriate tools and understand electrical wiring and potential hazards. If there is any doubt, contact the Fairbanks Access Solutions service representative to arrange professional maintenance of the equipment.
- Do not climb or stand on equipment for any reason
- Use appropriate protective gear and tools during installation
- Personnel are to perform lockout/ tag safety requirements, per OSHA regulations
- All personnel should read, be familiar with, and observe all CAUTION, DANGER, AND WARNING decals/labels placed on equipment
- Follow all maintenance schedules and procedures; it is critical to maintain trouble free performance of FBAS equipment
- There may be residual voltage in the unit-proceed with caution
- The battery is a high output style that stores a great amount of energy; enlist care when servicing the battery, power board, or controller

  The unit contains a Rechargeable Sealed Lead-Acid Battery. The battery should NOT be disposed of in normal trash containers, but recycled. In the USA call 1-800-SAV-LEAD. The battery is functionally similar to a car battery supplier.
- Read battery markings for additional safety and disposal information
- Ensure all shields, guards, nuts, bolts, and screws are in place and secure.

1.5. Recommendations

DO
Read all manuals completely.
Follow all instructions completely.
Follow all maintenance schedules for trouble-free performance of **Fairbanks** Access Solutions equipment.
Ensure backup battery remains connected during controller unit service to prevent incorrect date, time, or possible data loss when power is restored.
Verify high voltage is disconnected by checking the voltage with a volt meter on each circuit.
Ensure the following devices are fully operational: card reader, receipt printer, Ethernet gateway, and internet account with email.
Monitor emails and transactions, possible errors will be indicated in Email error message; frequently check.
Properly recycle batteries.
Change codes regularly and remove past users from list to maintain security.
Use care when setting operational procedures and user security levels.
Turn off main circuit breaker and wait 60 seconds prior to disconnecting battery or main power controller box.
Enlist care when handling battery; it stores abundant energy and remains active after main power is turned off.
Test all common transactions prior to processing customer transactions AND opening business.
Save the initial setup account configuration for future reference.
For transactions, completely insert card into reader and quickly withdraw.
DO NOT
DO NOT operate the system until all safety features are tested.
DO NOT attempt to add or retrofit components to equipment without first contacting FBAS.

Section 2: Maintenance

2.1. Securing the Terminal cabinet

The Access terminal comes with a padlock when inserted, locks and prevents opening the housing. For record keeping have the key tag # written down and stored.

If one or both keys are lost the key tag# can be used to reorder keys for the exact lock. Contact a local Fairbanks distributor or tech services at toll free 800-451-4581, press 2, press 1.

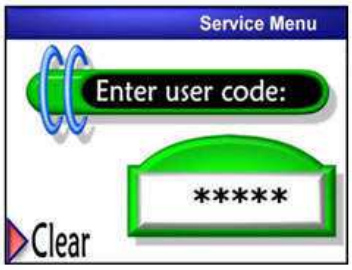
2.2. Opening Secure Access Entry Unit

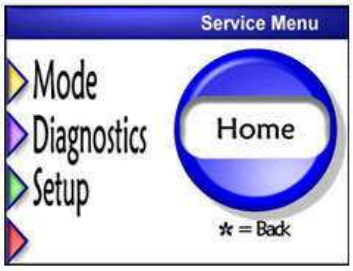
By default the Access Terminal is configured to sound an alarm from unauthorized users when a service and user code is not entered. To change paper or further maintenance enter the below steps.

STEPS IN DISABLING ALARM

From keypad, type:
77
12345

From the Service Menu Home screen the door alarm will be disabled.





Open cabinet door by pressing up on release lever, located in bottom right of unit.
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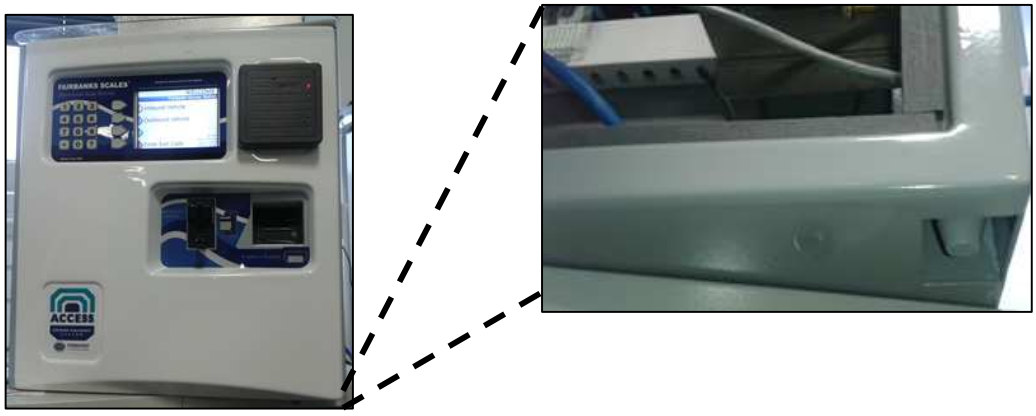
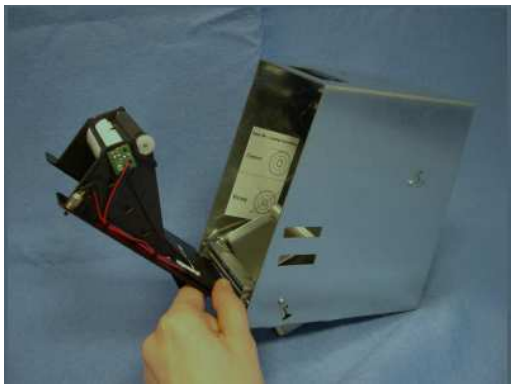


2.3. Loading the Printer Paper



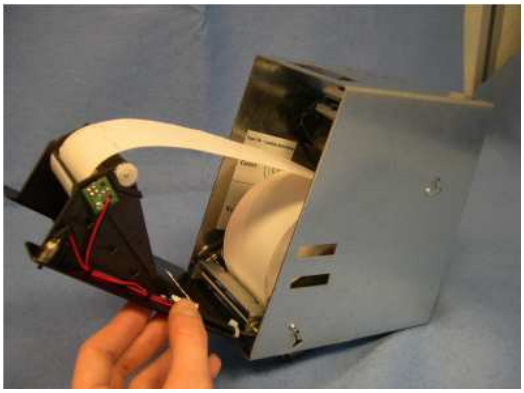
1. Open the front door assembly, picture shown without printer paper loaded.

2. Place paper roll inside of printer assembly, picture shown with metal core inside of roll.

3. Verify receipt paper is pulling from top down, note position is pulled close to feed roller.

2.3. Loading the Printer Paper, Continued

4. Feed paper through slot in front of white plastic hinge, note ," white feed here" sticker position.



5. Side view of printer assembly loaded without front door hinge open, note paper is in the feed area.

2.3. Loading the Printer Paper, Continued

6. After successfully loading paper and closing the printer door, a configuration page will print.

   If paper fails to print, press the button on the top right quadrant of the printer door, this should manually feed paper through.

   If no paper is printing or feeding through the printer, verify the previous 5 steps again; possible causes could be pinched paper in printer assembly door or the paper has been fed improperly.

2.4. Create Backup From USB Memory Stick

After successful installation and configuration of the site it is good practice to back up the Access Terminal to lessen future down time.

Note(s):

Using the navigation prompts will create a directory with the units' serial number then the data is stored inside it. This procedure allows multiple units to be backed up to a single USB jump drive. Restoration of files reflects on the serial number assigned to the unit.

To backup, place a USB drive in the USB connector on the communication board, located in region (a) then follow the screen prompts to backup files.

If the Titan board requires replacement, remove the existing SD card (region b) and insert into the replaced board. If the SD card is undamaged the version and configuration information will transfer over to the new board. If the SD card is damaged a preloaded Titan card can be installed and updated using the USB drive.

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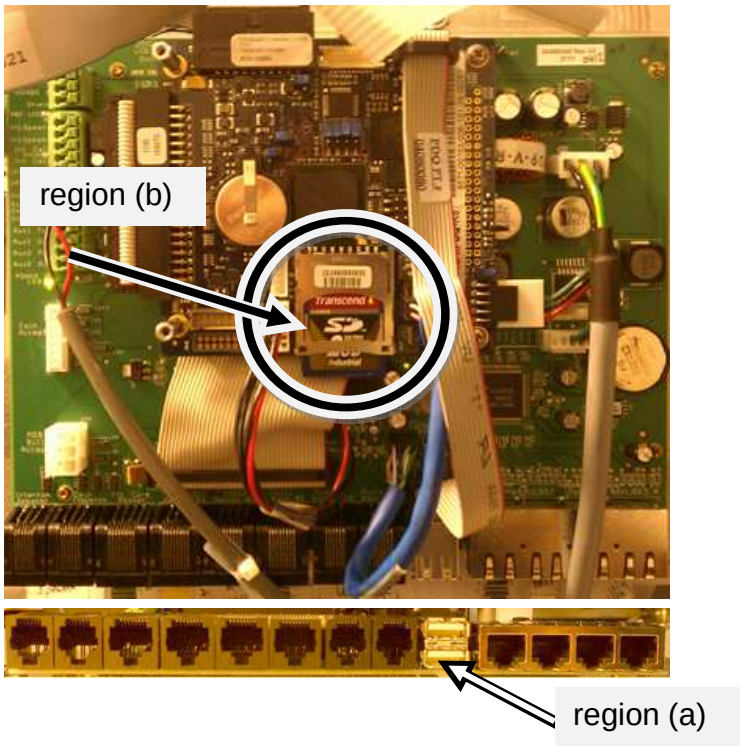


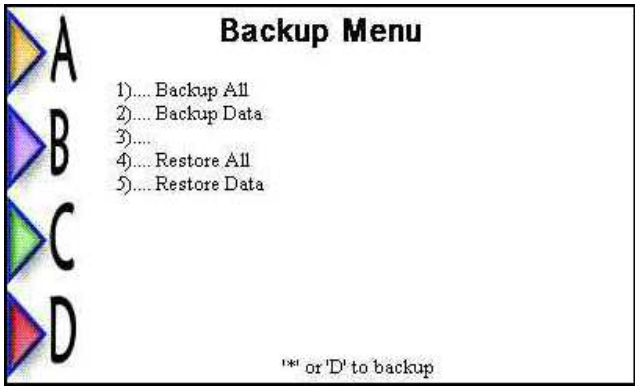
Follow the navigation steps below from the "**Welcome**", location.

From a successful power up the first screen or state is the main state, "Welcome".

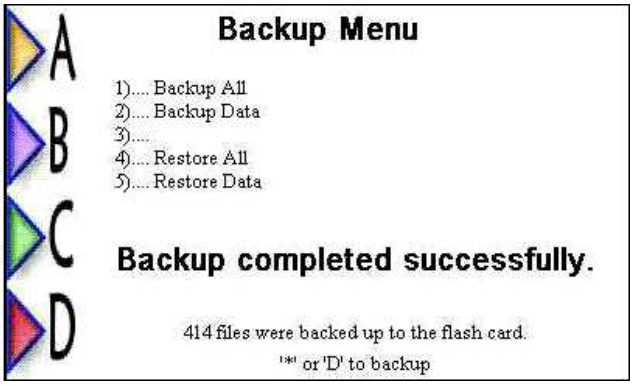
Welcome >> Press *77* >> Press 12345 >> Press 2nd Key down >> Press 1st Key >> Press 7 >> Press 1 for backup all data

2.4. Create Backup From USB Memory Stick, Continued

To create a full backup chose option 1.

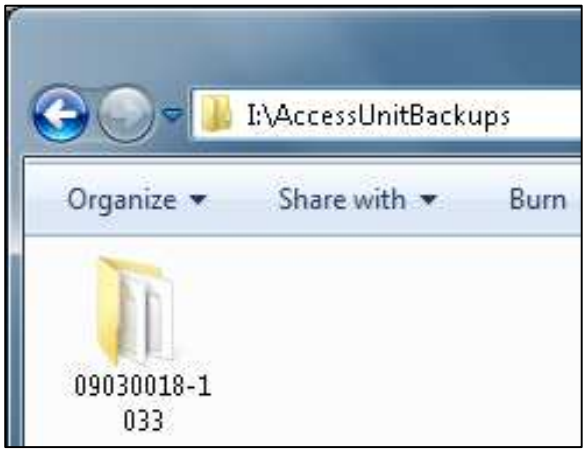


Screen update after backup completed successfully.



When viewing the USB thumb drive on a Windows operating system, the drive should mount as an additional drive letter under, My Computer OR Computer location.

Each Access Terminal backup creates a folder with the terminals serial number. This allows storing multiple units due to the unique folder naming/serial number reference.



2.5. Restore From Backup Using USB Memory Stick

Note(s):

The USB memory sticks restore is only necessary if the SD card or software has been damaged. Otherwise all files pertaining to Access Terminal operations are contained on the SD card.

If the SD card and software is intact but a hardware replacement of the Titan board is necessary then only move the existing SD card to the new board.

With the USB memory stick inserted on the communications board, go to below navigation points.

From a successful power up the first screen or state is the main state, "Welcome".

Follow the navigation steps below from the "**Welcome**", location.

First **verify** the serial number on the unit is correct, if not the restore will not have correct reference to locate the previous backup.

1.) Login to the service home screen: Press *77* >> Press 12345 >>

2.) Select Setup: Press 3dnd arrow button

3.) Set Serial Number: Press 2nd arrow button

4.) View Serial Number, if correct press '*' otherwise modify and save.

5.) Back out to the main Welcome Screen by continually pressing * till the Welcome Screen is seen.

Restore after serial number confirmed.

1.) Login to the service home screen: Press *77* >> Press 12345 >>

2.) Select Diagnostics: Press 2nd arrow button

3.) Tech Menu: Press 1st arrow button

4.) Backup Menu: Press key 7

5.) Restore All: Press key 4

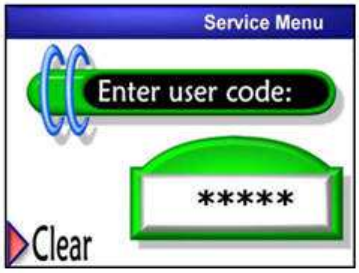
2.6. Power Down Terminal

To properly power down the unit, follow the below instructions.

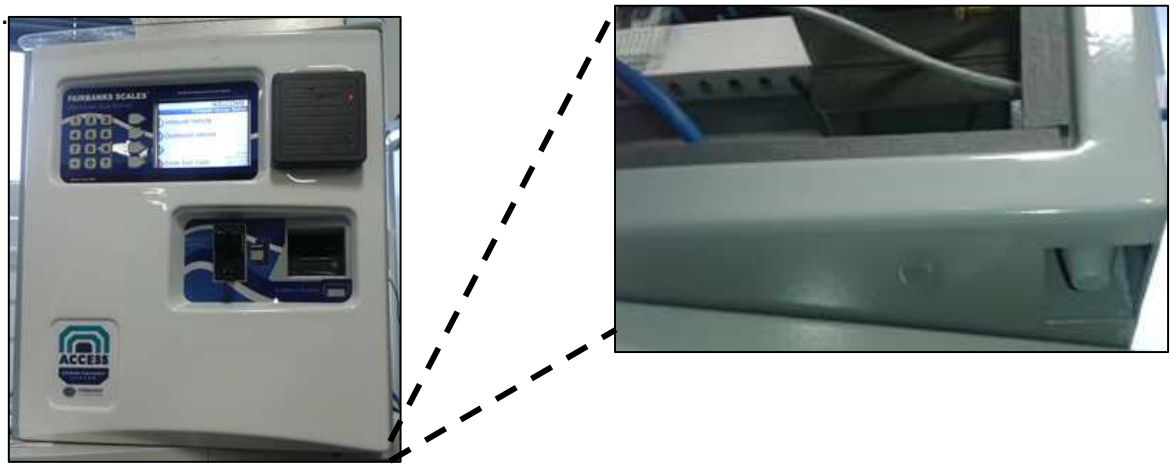
Steps In Complete Power Down

From keypad, type:
77
12345

Choose option shutdown unit from the Diagnostics Service Menu.

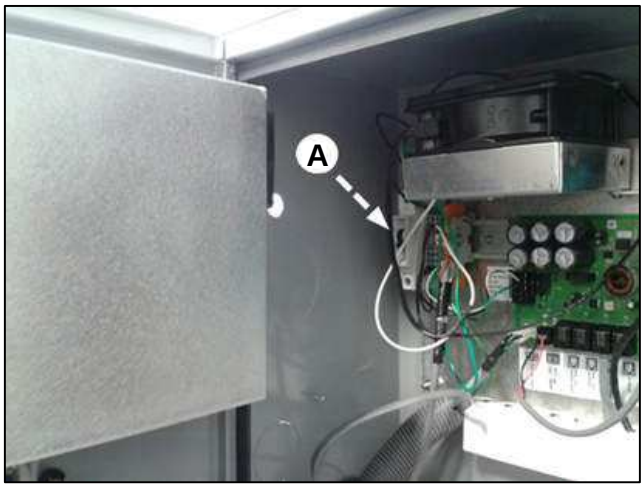


Open cabinet door by pressing up on release lever, located in bottom right of unit.

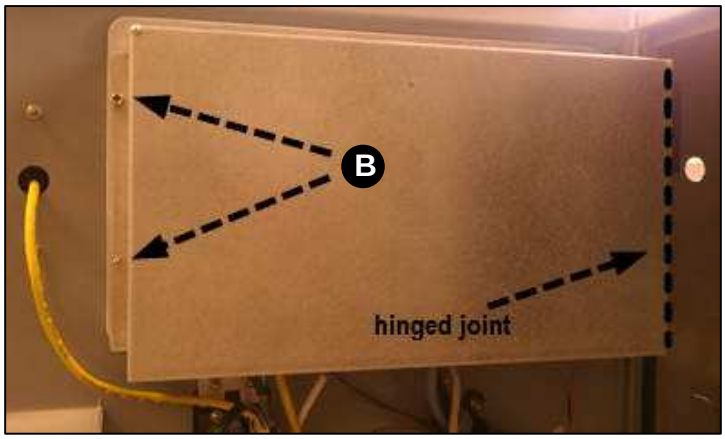


2.6. Power Down Terminal, continued

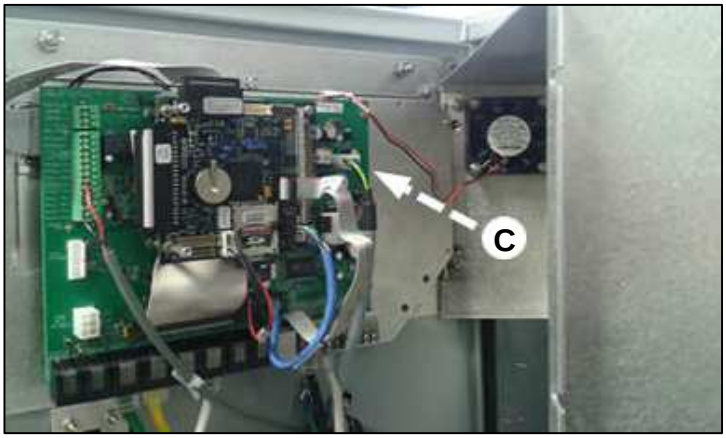
Locate breaker labeled A, and power down by pressing the switch downward.



Next locate and remove standoffs labeled B from left edge of door and open.



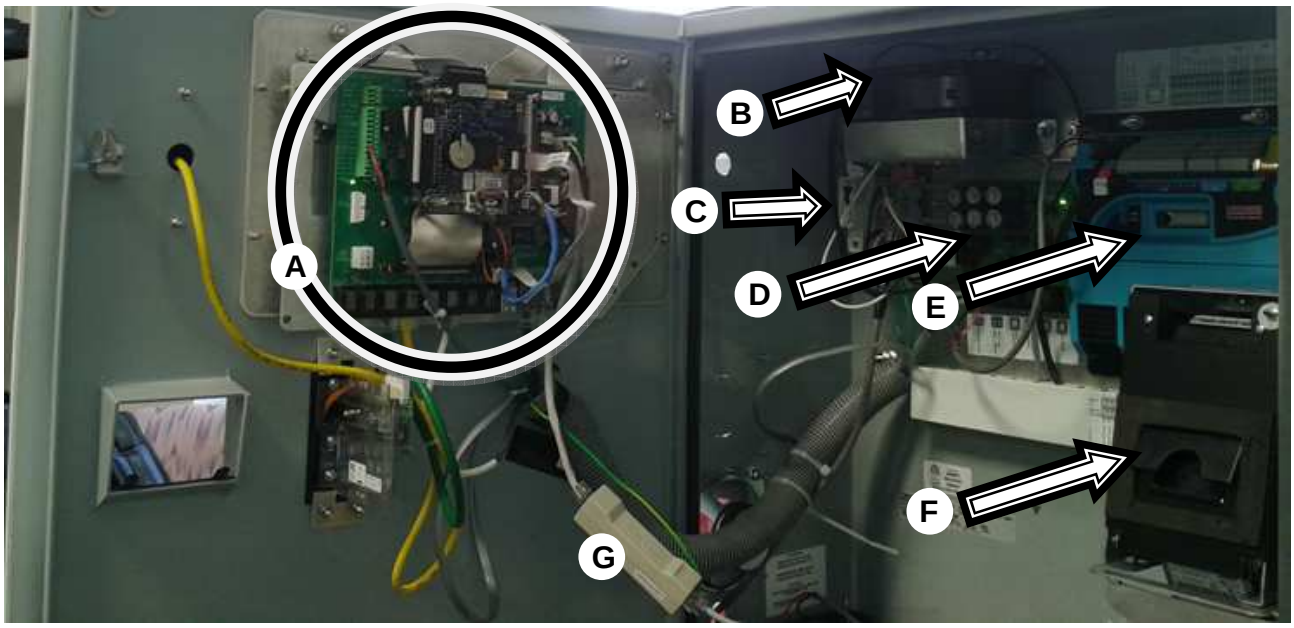
Locate and press in tab connector labeled (C) to remove power controller cable. Gently pull away from soldered connector.



*TIP
Powering off the unit in the above manner then reconnecting first C, waiting 15 seconds and turning power back on to A; produces a cold boot in which the unit fully reboots with all power discharged prior to booting. A stuck screen with no feedback from the keypad indicates the same symptom of a frozen mouse cursor on a typical pc system. With the system responding from a reboot, further trouble shooting can take place.

2.7. Parts Orientation

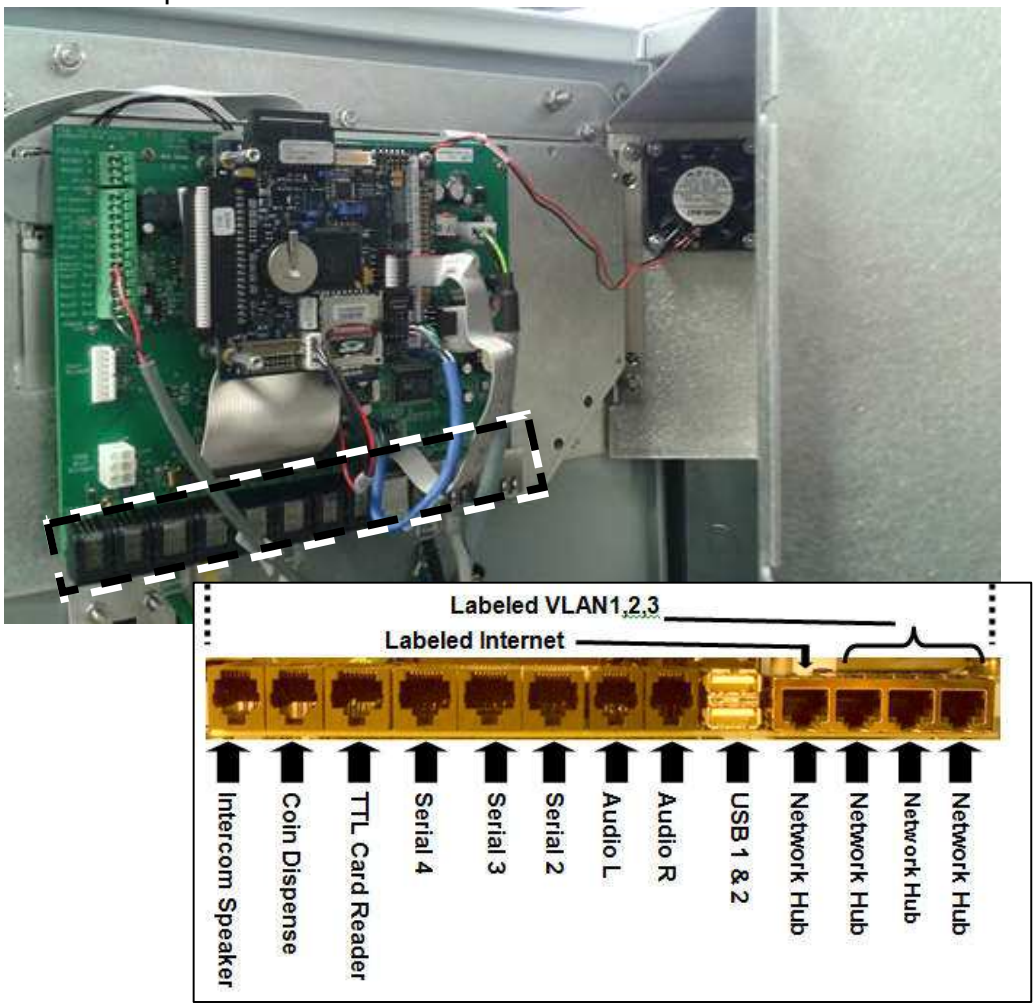
To help assist a Fairbanks technician in description the below items are listed in order of possible connection.



Label	Description
A	Communication Board and Titan Board
B	Heater and Blower Assembly
C	Power Breaker
D	AC Board
E	IO Node
F	Receipt Printer
G	Network Filter

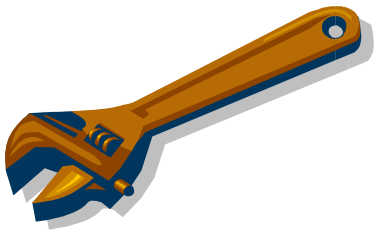
2.7. Parts Orientation, Continued

The below image shows the communications and Titan board along with the possible connection ports from the bottom of the board.



2.8. Contact Support

800-451-4581 @ prompt press 2 then 1.



If service is needed beyond the scope of initial install or for questions contact a service technician. The toll free line is (800) 451-4581, at the prompt press 2 for the Automated Access Solutions then 1 for a technician.

Section 3: Access Terminal Screens Defined

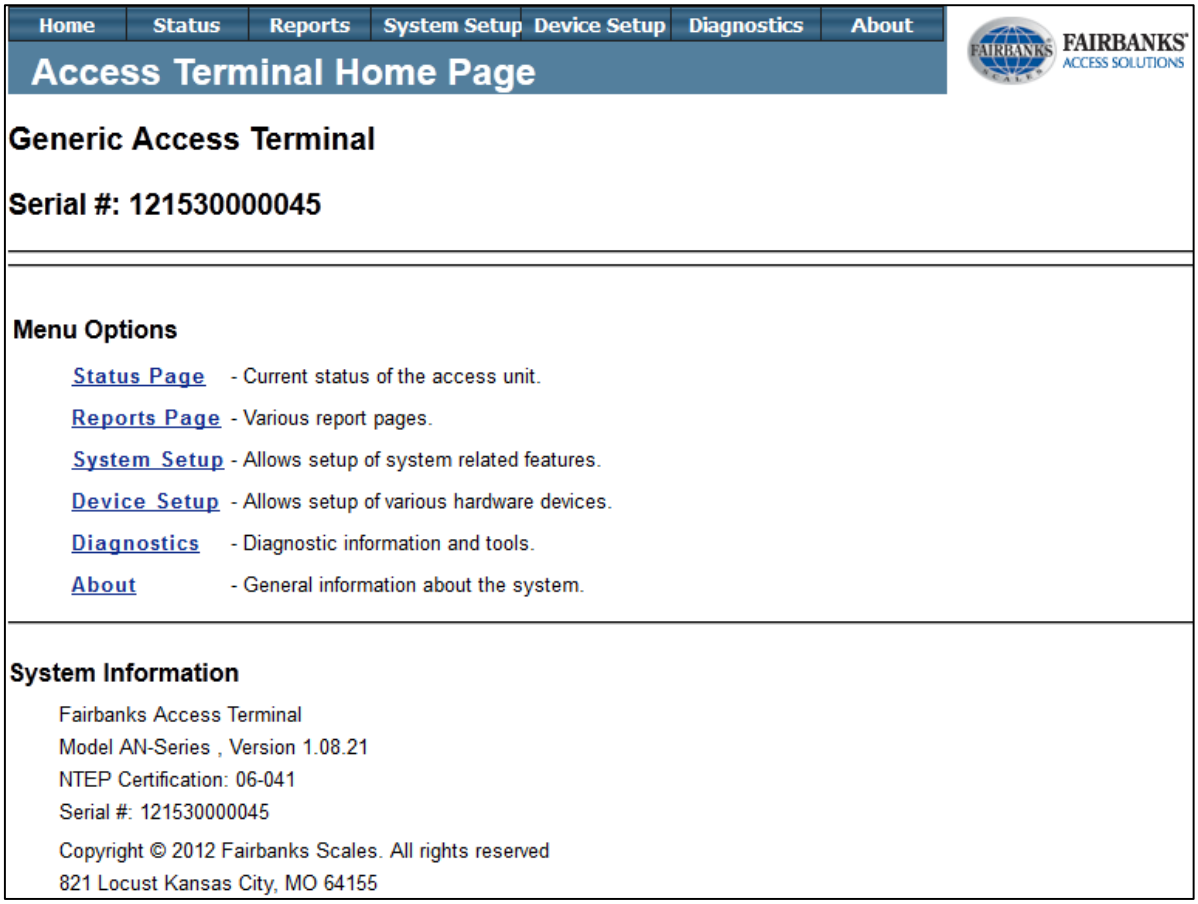
This section shows captures of the navigation screens contained in the Access Terminal web configuration area, grouped by navigation top menu, containing sub-menu items. The home page screen shown here also contains the units name, and serial number.

It is recommended to only view items in the Home and Status location unless a Fairbanks authorized technician advises otherwise. Changing these setting may report false data or shutdown automated scale usage.

3.1. Home

Containing submenu items: Status Page, Reports Page, System Setup,

Device Setup, NTEP Setup, Diagnostics



3.1.1. System Status Page

System Status Page displays Access Terminal information

A Driver Screen “Welcome Screen”, shown

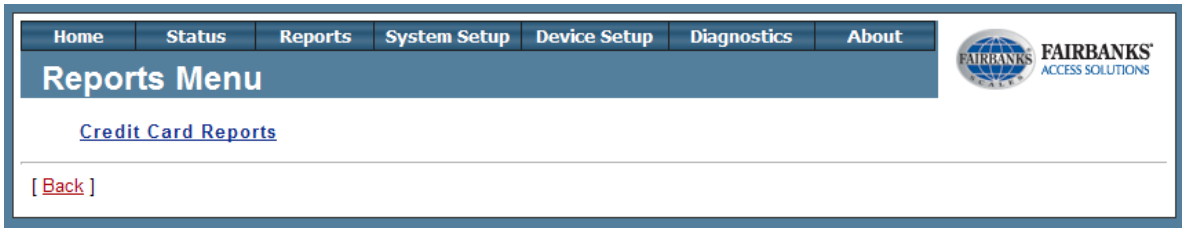
B Scale status shown when Scale Indicator is configured.

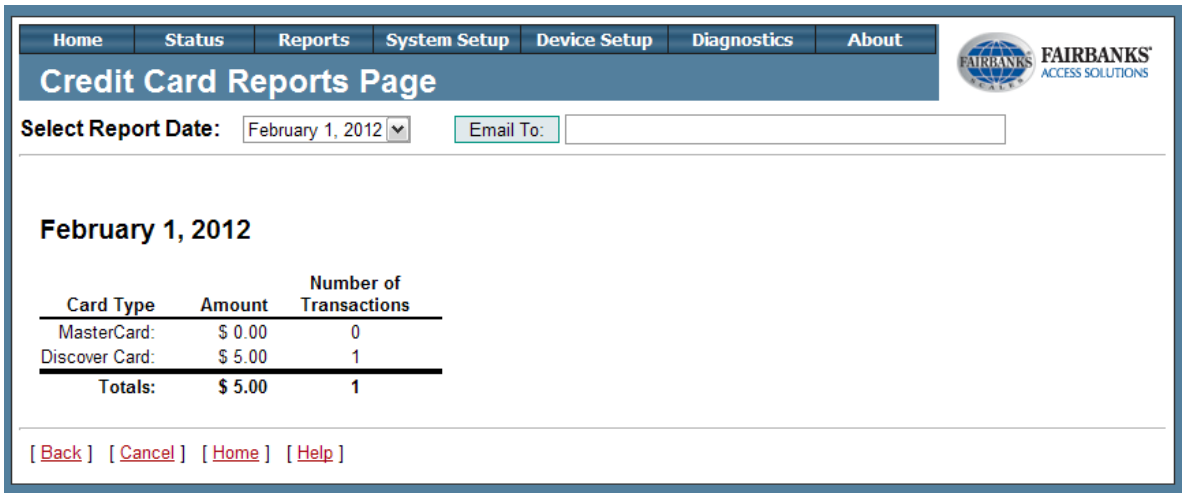
C Raw Data, shown if tracing enabled is checked under Scale Indicator Setup (see section 3.3.6).

D Status of Terminal: Unit Ok shown but can also be a starting place for troubleshooting errors.

3.1.2. Reports Page

The credit card report is a daily report that includes the number and type of credit card transactions that have occurred on individual terminals.



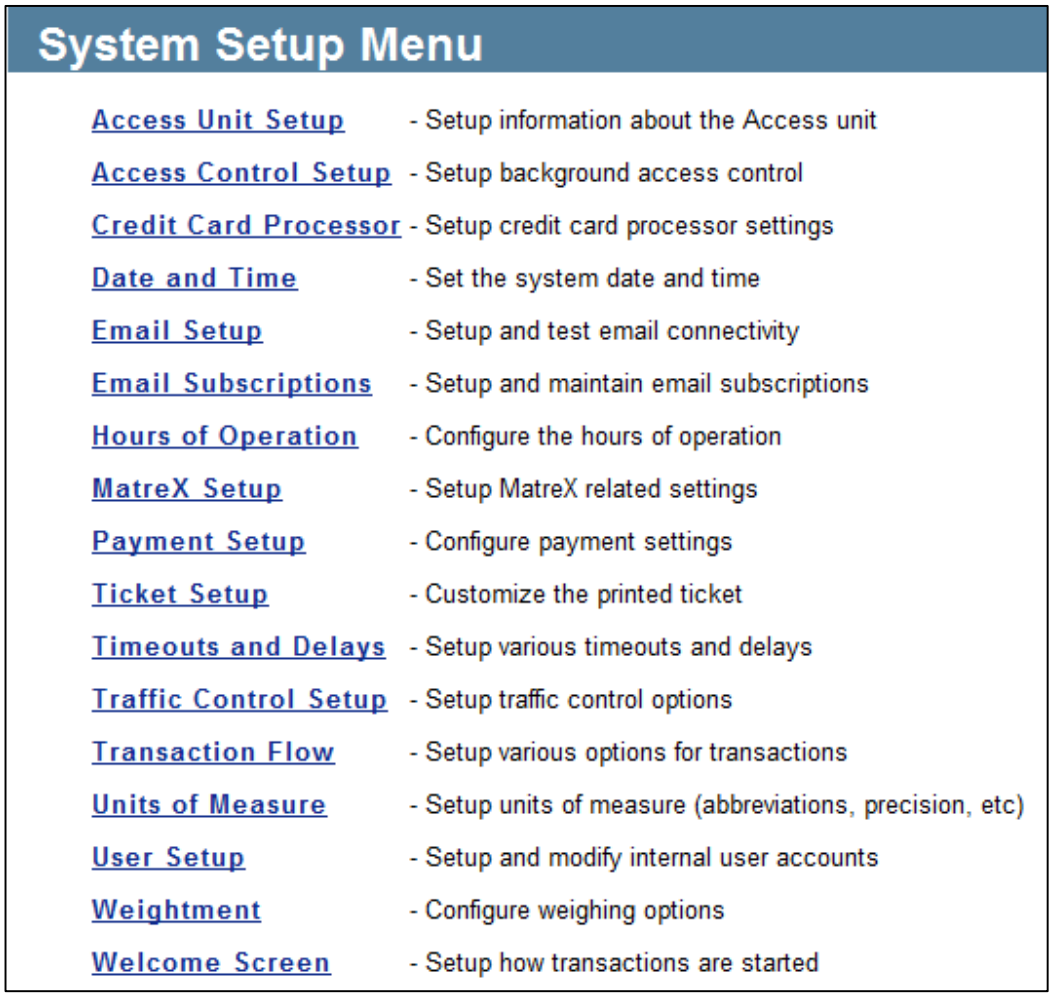


Note(s):

Credit Card Reports page only reflects each individual Access terminals transactions. If there are multiple Access terminals then a better practice is using the credit card reports from the credit card processing agent Authorize Net or running custom reports from MatreX.

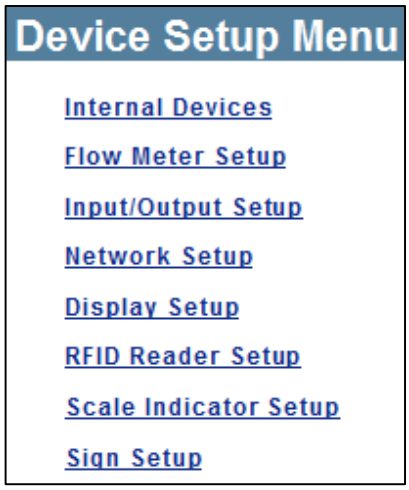
3.1.3. System Setup Menu

The below page contains the System Setup menu of the FBAS unit. The subsection describes all of the contents currently on the Access Terminal software.



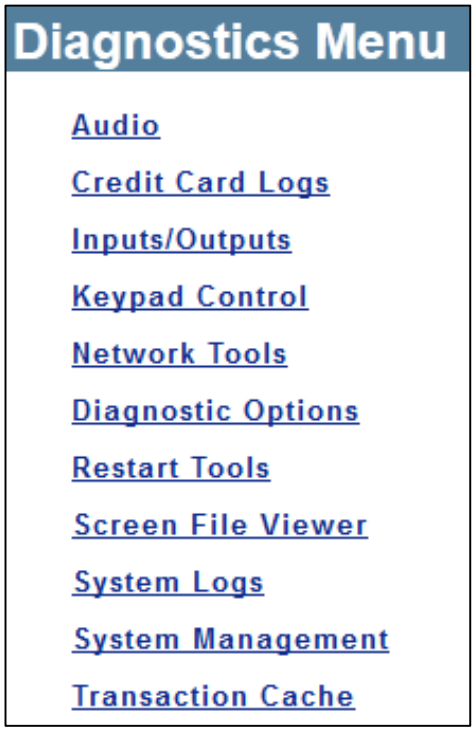
3.1.4. Device Setup

The Device Setup Menu contains multiple information setup links. This menu's main focus is configuring installed devices, if any.



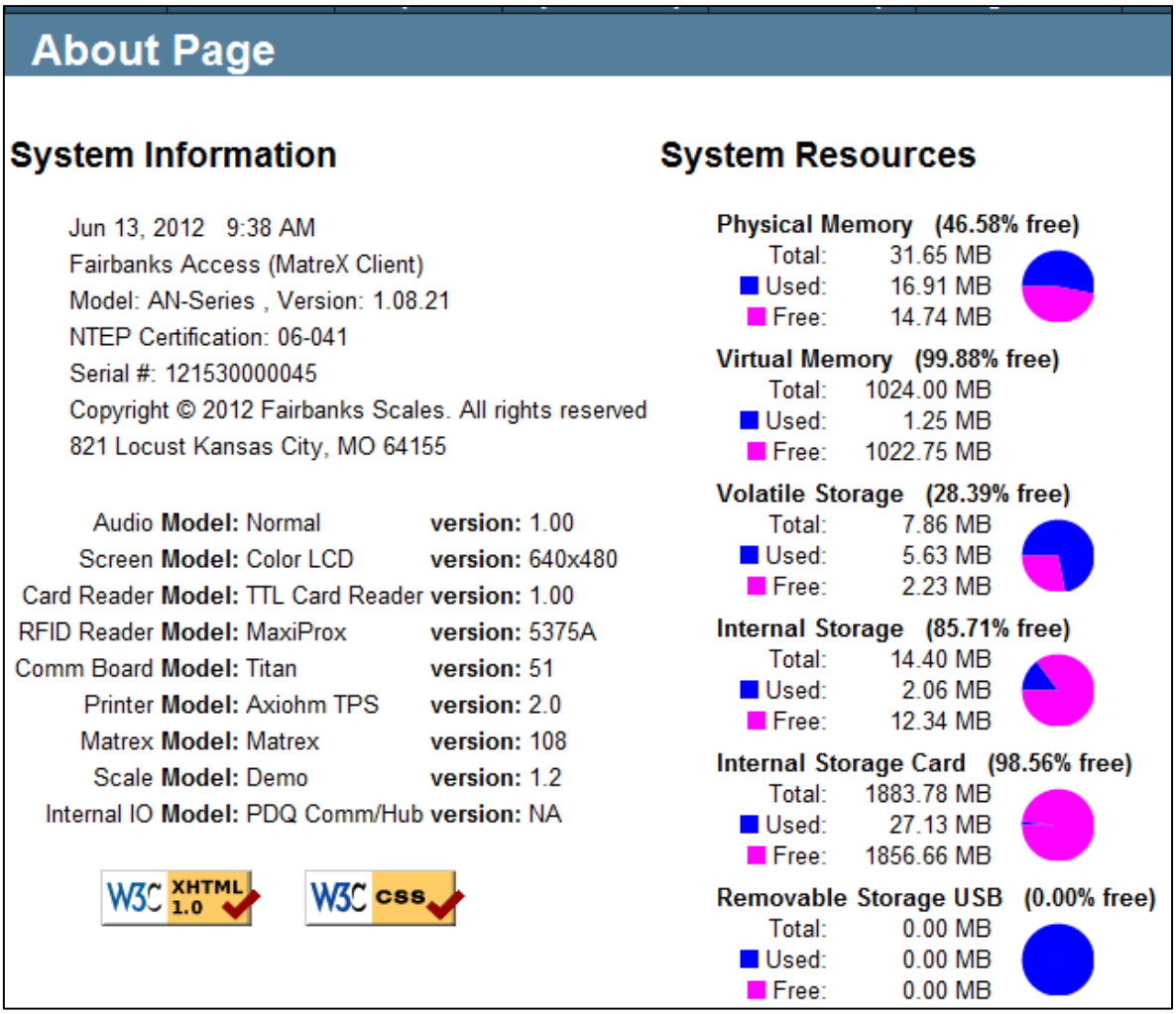
3.1.5. Diagnostics

The Diagnostics Menu contains viewing, event controlling, and certain command tools to the Access Terminal.



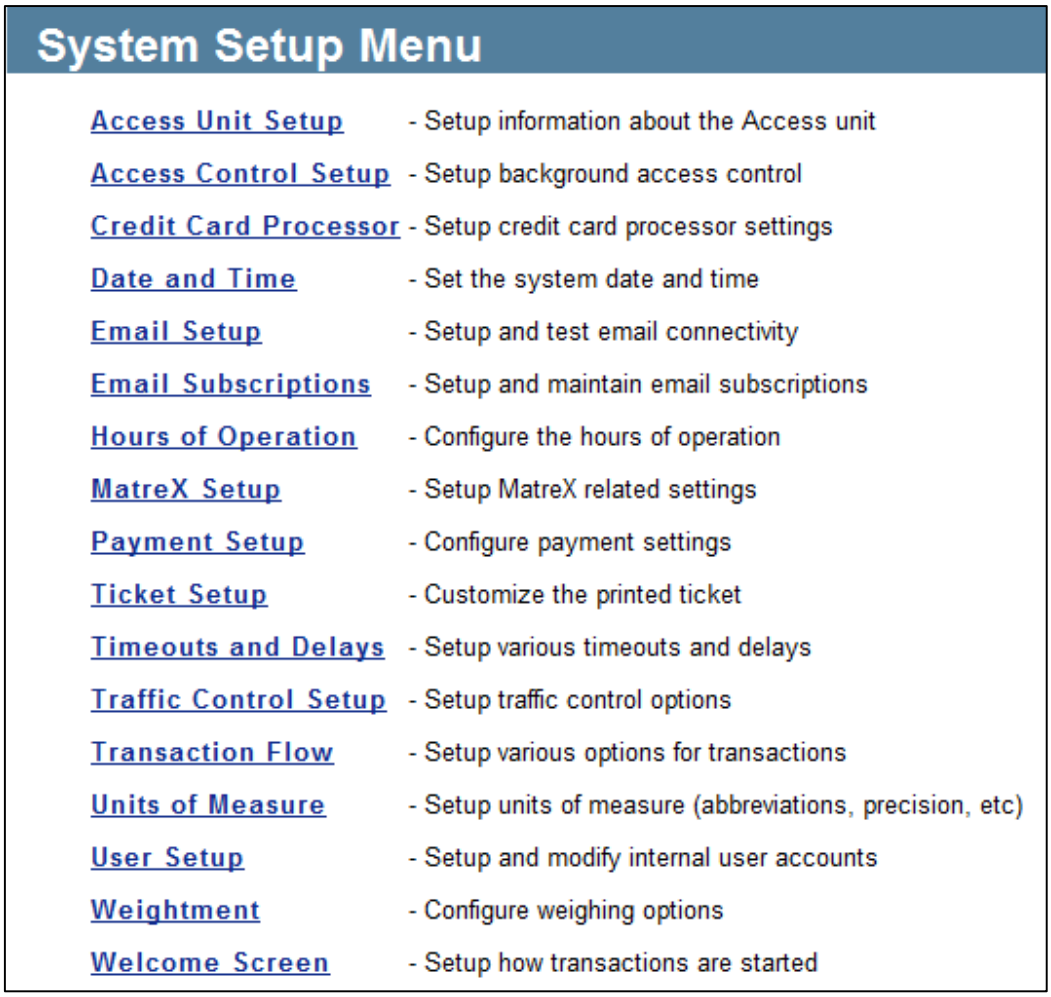
3.1.6. About

About contains system information including: installed version, enabled features, and model/ software versions for various devices

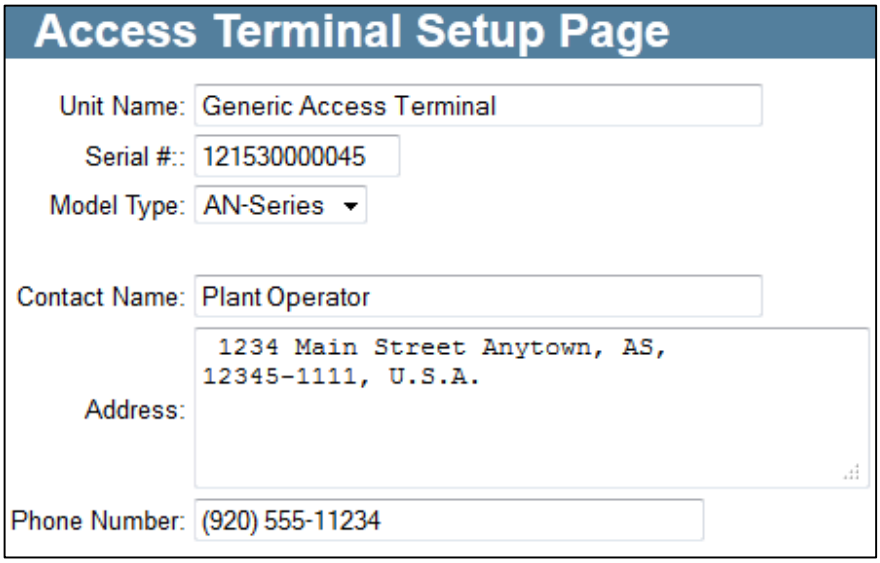


3.2. System Setup

System Setup menu of the FBAS terminal controls the software specific settings. The subsection contains usage and definitions for site specific use.



3.2.1. Access Unit Setup



The Access Terminal Setup display contains important information regarding the access terminal. The terminal name, serial number, and model are programmed here. The contact information for the site can also be entered to help provide a point of contact if service is needed.

- Site Name: Labels each Access Terminal, to help identify location or purpose.
- ✓ Serial #: Identifies each Access Terminal uniquely to MatreX server
- Model Type: Verify as AN Series
- Contact Name: Optional contact information for site
- Address: Address Optional contact information for site
- Phone Number: Optional contact information for site

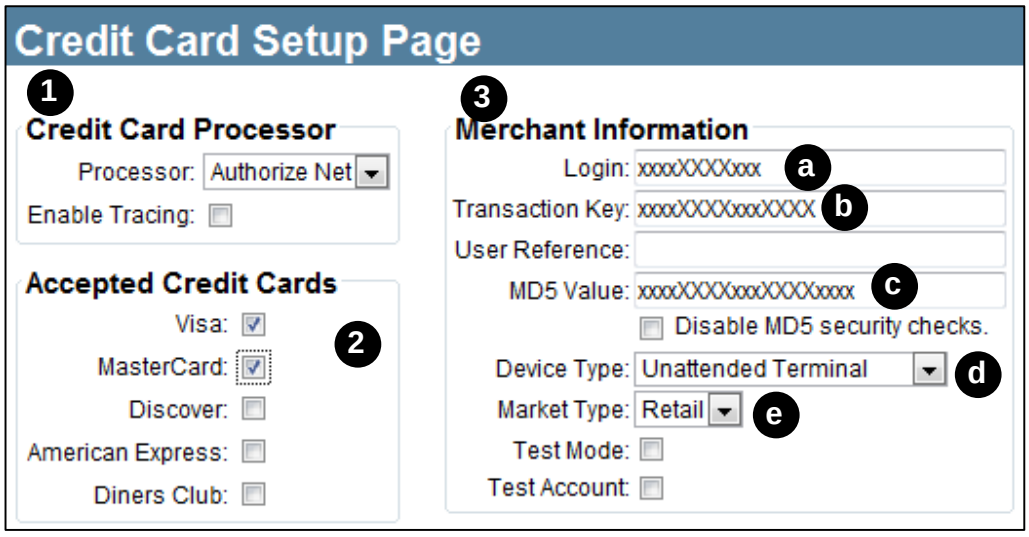
✓***Required entry for proper operation.***

3.2.2. Credit Card Processor Settings

To allow charges for transactions at an individual terminal an account with Authroize Net is required along with known sections 2,3 and a.

The below items are required to be set if using Authorize Net, otherwise set to none and transactions will not be charged.

1. Select Authorize Net for processor
2. Check the accepted cards from Merchant supported range
3. Merchant Info:
    a. Login will be setup from the Authorize Net account web page.
    b. Transaction key will be setup from the Authorize Net account web page.
    c. MD5 Value will be setup if used on the Authorize Net account web page.
    d. Device type is set to Unattended Terminal
    e. Market Type is set to Retail.

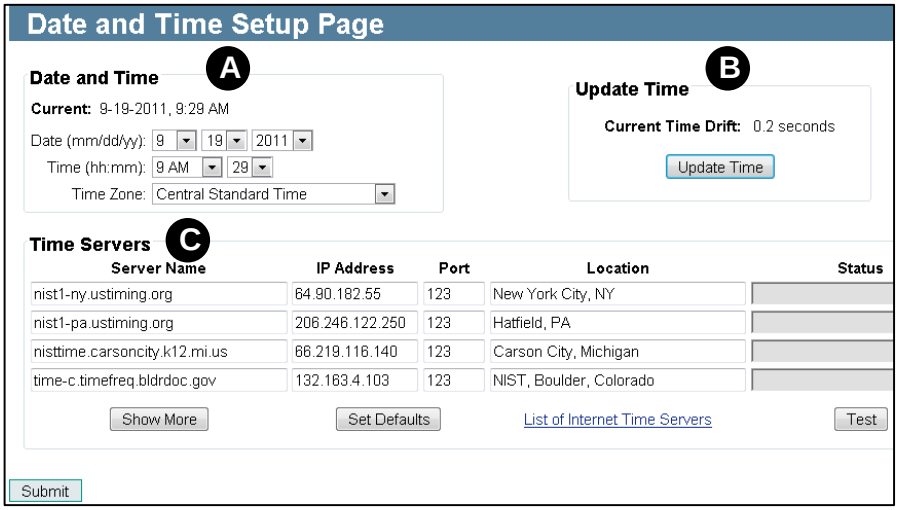


3.2.3. Date And Time Setup

Date and Time Setup Page allow for selecting the server name and IP address specific to the time zone.

The terminal uses the SNTP protocol to get time from the time servers.
The system will always try to use the first server in the list. If that one fails it will try the next in the list until one works or the list runs out.

If the terminal is not keeping time correctly, an internal time server may need to be added to the list. Contact the sites IT dept. to get the name or IP address of the time server and replace the first entry in the list.



A Date and Time

- Set manually by drop down: Current time, Set Date, Set Time, Set Time Zone

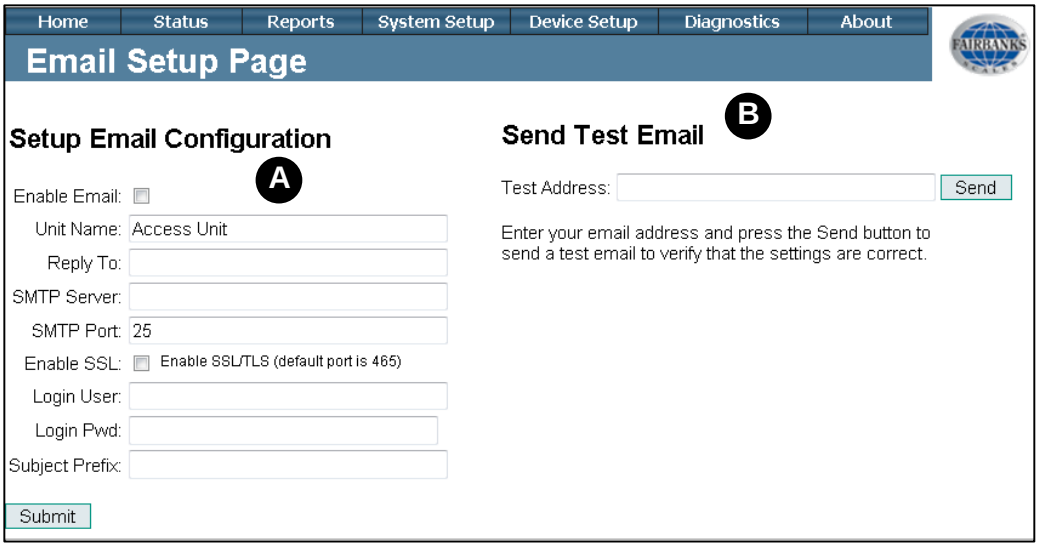
B Time Servers

- Server Name- required host name of NTP time server
- IP Address- if DNS isn't used then it is required, otherwise use for robustness
- Port- default NTP service is on 123
- Location- optional, describes location
- Status- after clicking Test it will show the state of the server test
- Show More- shows more time servers to choose from
- Set Default- sets the current time servers as the new default list
- Test- runs test against all time servers in list

C Update Time

- Update time will correct any current time drift that may be in the status

3.2.4. Email Setup



A Email Configuration

- **Enable Email:** If checked unit sends status of unit dependent on subscription type.
- **Unit Name:** Unique name to identify the specific unit in email.
- **Reply To:** Recipients will send to this email if replying back to email.
- **SMTP Server:** Email server address used for the unit to pass thru.
- **SMTP Port:** The default port is 25 but can be altered if necessary.
- **Subject Prefix:** Title of the email going to the sender

B Test Email

- **Test Address:** After successful configuration, test by sending to a test email address

Results: Sent email for 'Test Email'

Screen Capture of a failed email transmission:

Error: Failed to send email for 'Test Email'. Reason: Functions gethostbyname## or gethostbyaddr## failed.

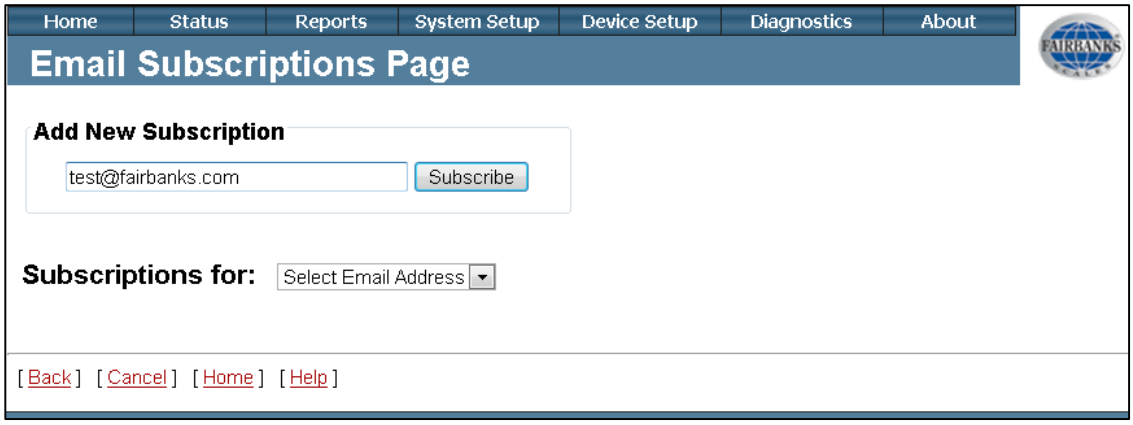
Possible causes to this specific error:

- Incorrect entry in SMTP server
- If SMTP server is by name, verify DNS is working under Network Setup Page

3.2.5. Email Subscriptions

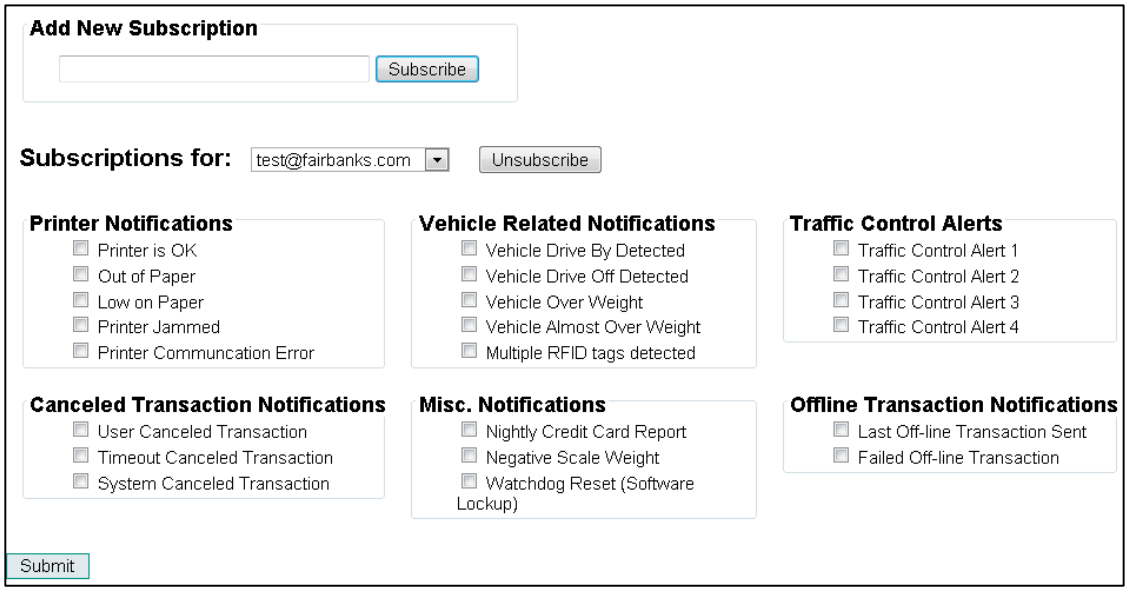
Email Subscriptions provides a way for users to setup email notifications for various types of events that can occur at the terminal.

To add a new email subscription, first enter the email address to include, then click subscribe. Otherwise select an existing email address from the list.



Below shows the multiple options the subscribed user has.

After completion click on submit. To select from different subscribers click on the drop down next to “Subscriptions for:”



3.2.6. Hours Of Operation Setup

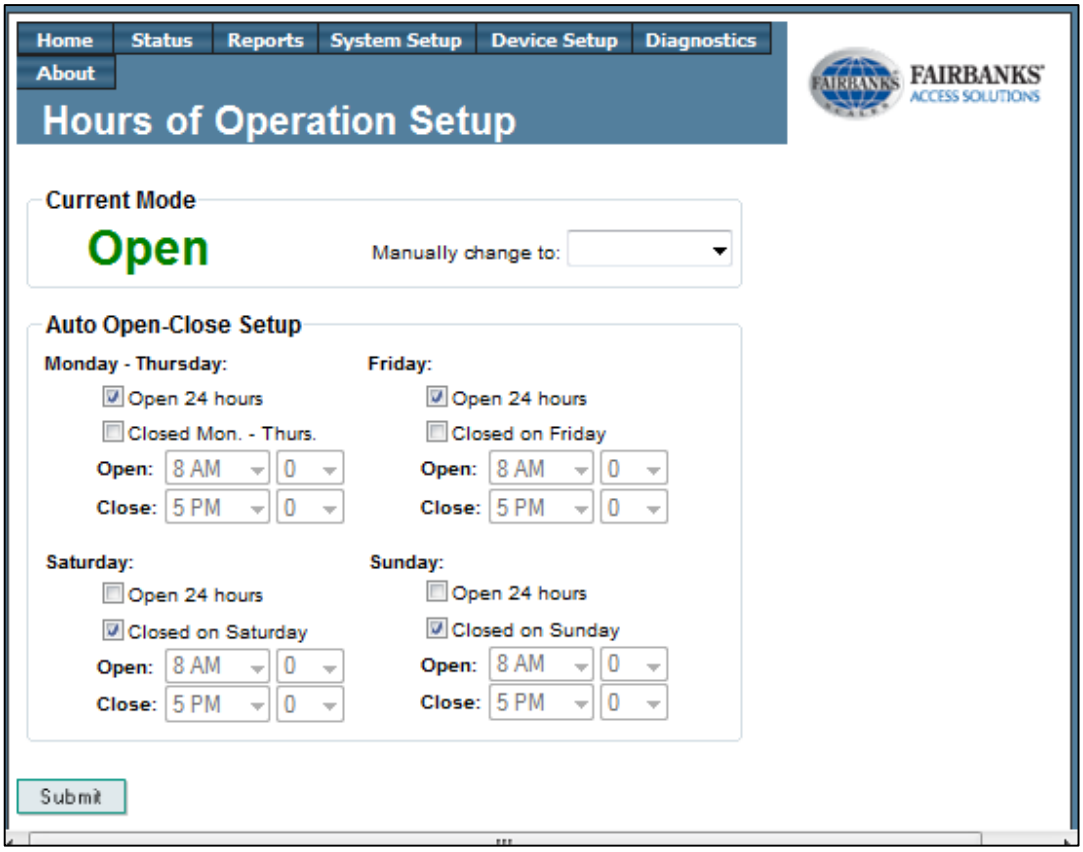
Hours of operation controls when the Access Terminal is available for transactions. Below are four options that can be toggled.

Open: The terminal is always open and allows transactions. This is the default state.

Closed: The terminal is always closed and does not allow transaction.

Maintenance: The terminal is closed and any traffic gates (configured on Traffic Control page) are opened. No transactions are allowed.

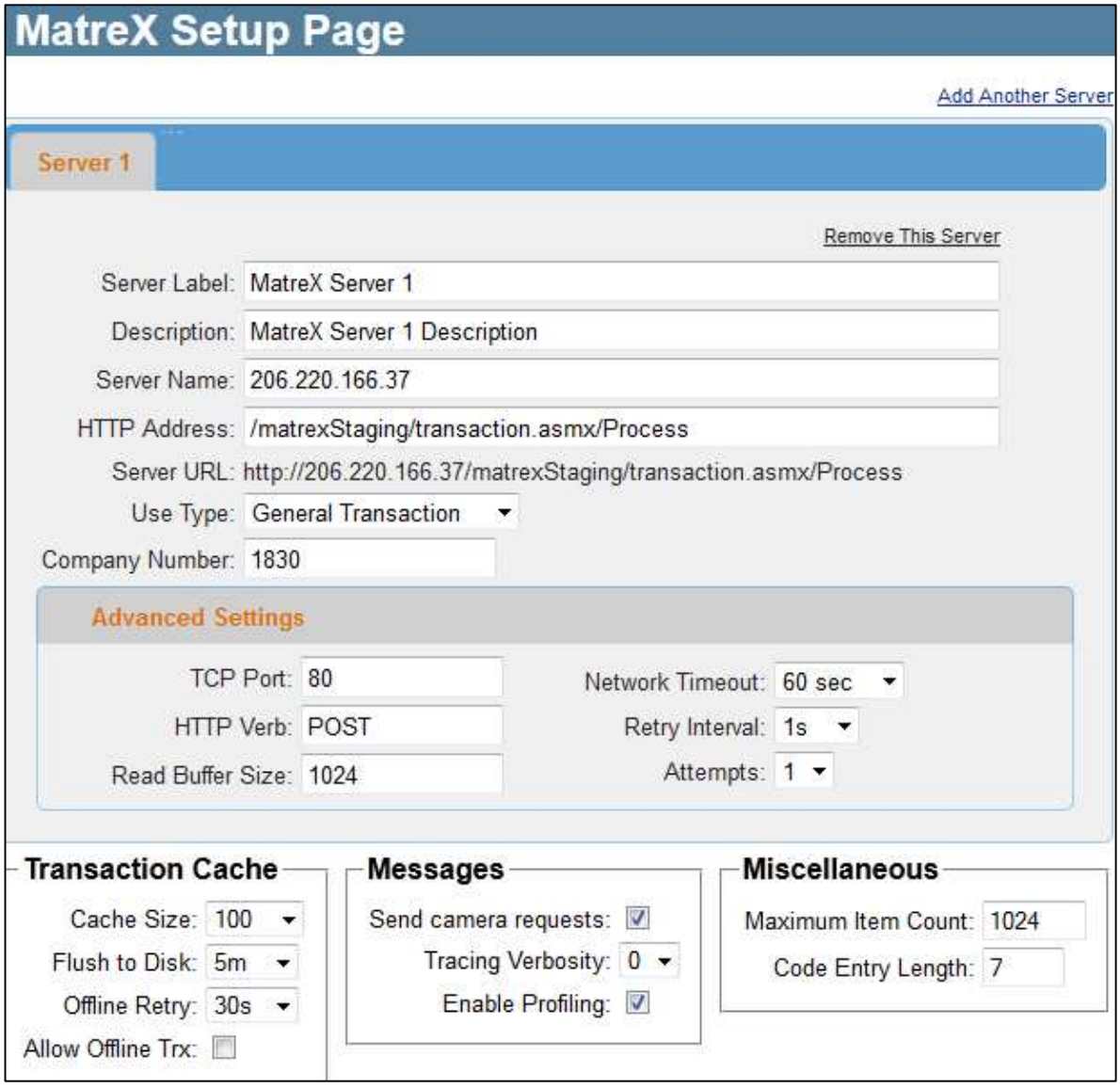
Auto Open-Close: When in this mode the terminal can automatically close down each night and open up each morning. When turned on, user may setup system to automatically close (not allow transactions) and open (always allow transactions).



3.2.7. Matrex Setup

The terminal supports multiple server configurations which can be toggled from the home page, and new server configurations can be created by clicking on the link Add Another Server. Normally only one server is needed so this is a more advanced feature.

This page only allows configuration of the servers. The actual toggling of the active server is done from the home page of the terminal's web interface.



3.2.7. Matrex Setup,Continued

SERVER CONNECTION

- Server Label: Distinguish between server connections.
- Description: Additional information about server connection.
- Server Name: Name or IP address of the MatreX server; once functioning, DO NOT change setting. It is always recommended to use the name of the server instead of the IP address.
- **HTTP Address**: Allows user to install MatreX in a different location of processing server (non default website). Once functioning, DO NOT change setting.
- **Server URL**: Shows full web address the unit connects to.
- **Use Type**: (previously located on Access Terminal Setup)
  see **Section. 3.1.3.1. ACCESS UNIT SETUP**
- **Company Number:** The serial number of the Access Terminal. This should be set to match the serial number on the label located inside the Access unit. This number can affect communications with MatreX and the ability to back up and restore**.**

ADVANCED SETTINGS

- **HTTP Verb**: DEFAULT IS POST Allows for different types of HTTP request, do not change unless also changed in the MatreX server settings.
- **HTTP Port**: DEFAULT PORT IS 80
- **Read Buffer Size**: DEFAULT 1024
- **Network Timeout**: Value used to communicate with MatreX processing server. Calls typically fail prior to value.
- **Network Attempts**: Attempts to connect to the MatreX server before failing.
- **Retry Interval**: Delay between each retry attempt.

3.2.7. Matrex Setup,Continued

- **TRANSACTION CACHE:** Cache Size: Number of transactions stored locally on Terminal; includes completed and off-line transactions.
- **Flush to Disk**: How often the transaction cache is flushed to file.
- **Offline Retry**: Number of times the Terminal attempts connecting to the MatreX server before failing and continuing with an off-line transaction.
- **Allow Offline Trx**: Select the check box for a yes response. This permits transactions to be performed when the server is off line. The transactions are stored in the terminal memory until the server is back online.

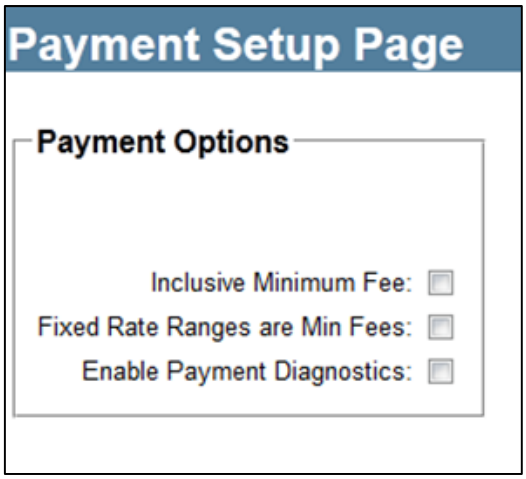
MESSAGES:

- **Send Camera Requests:** When enabled, the terminal will send additional messages to MatreX at various stages during the transaction. These messages allow MatreX to capture an image from any cameras associated with this terminal for the particular stage of the transaction. If not enabled, MatreX will only capture camera images during the Authorizing and Processing states.
- **Tracing Verbosity:** Default 0; allows for additional diagnostic data. When greater than zero, it can significantly slow down the system.
- **Enable Profiling:** Enables performance profiling on the messages sent to the server.

MISCELLANEOUS:

- **Maximum Item Count:** This is the maximum number of items for a single prompt that the terminal will accept. For example, if a customer has more than 1024 materials, then this count must be increased.
- **Account Code Length:** Maximum number of digits in an account number. The Keypad Number (previously labeled as “cardless” number) for a vehicle account can be less than this maximum, but the user will need to push the enter button. Otherwise when the last digit (based on this setting) is entered, that number is automatically looked up.

3.2.8. Payment Setup



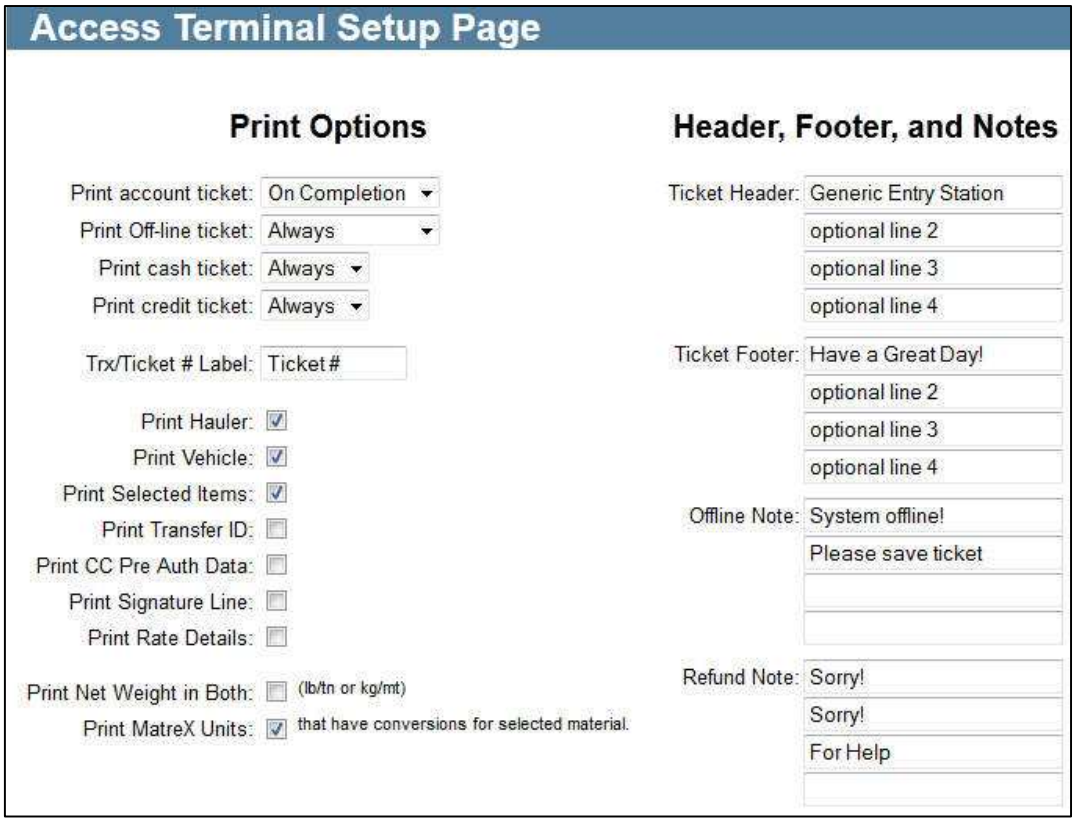
Inclusive Minimum Fee: Normally, any additional surcharges are added onto a minimum fee. If this option is enabled, the minimum fee is reduced to so that the additional surcharges and the reduced minimum fee will equal the desired minimum fee.

Fixed Rate Ranges are Minimum Fees: When this option is enabled, rate ranges that are have on a fixed rate, the fixed rate will be treated as a minimum fee.

Enable Payment Diagnostics: This option should only be on when troubleshooting payment calculations.

3.2.9. Scale Ticket Setup

Scale Ticket Setup determines when a scale ticket prints and what information to contain.



***Print Account Ticket*:** Controls when a scale ticket will be printed for vehicles that have an account in MatreX. Options are Never, Always, and On Completion (default). On Completion means that for a vehicle that weighs in and out, a scale ticket is only printed on the weigh out stage (when the transaction is completed).

***Print Off-line Ticket*:** Controls when a scale ticket will be printed for transactions that are off-line. Options are Never, Always (default), and On Completion. On Completion means that for a vehicle that weighs in and out, a scale ticket is only printed on the weigh out stage (when the transaction is completed).

***Print Cash Ticket*:** Controls when a scale ticket will be printed for transactions that were paid for in cash. Options are Never, Always (default), and On Completion. On Completion means that for a vehicle that weighs in and out, a scale ticket is only printed on the weigh out stage (when the transaction is completed).

3.2.9. Scale Ticket Setup, Continued

***Print Credit Card Ticket*:** Controls when a scale ticket will be printed for transactions that are paid for with a credit card. Options are Never , Always (default), and On

Completion. On Completion means that for a vehicle that weighs in and out, a scale ticket is only printed on the weigh out stage (when the transaction is completed).

***Transaction / Ticket Number Label*:** The user can customize the label used for the transaction or ticket number printed on the ticket. The default value is Ticket#.

***Print Hauler*:** If checked, the name of the hauler name (owner of the vehicle) will be printed on the scale ticket

***Print Vehicle*:** If checked, the vehicle ID will be printed on the scale ticket. This is the Vehicle ID in MatreX, not the ID that the driver used to start the transaction.

***Print Selected Items*:** If checked, the names of all of the selected items from the prompts will be printed on the scale ticket.

***Print Transfer ID*:** The transfer ID is a number generated by the terminal based on the serial number and the current date/time.

***Print CC Pre Auth Data*:** When enabled, any pre-authentication data (amount, authorization code, transaction id) will be printed for credit card transactions. This only applies to the pre-authentication phase of the transactions (weigh in stage).

***Print Signature Line*:** When enabled, a line on the ticket will be printed to allow the driver to sign the ticket.

***Print Rate Details*:** When rate information is printed it is normally just the finally charges, taxes and total charges. With this option enabled, additional rate information for any selected item will be printed as well.

***Print Net Weight in Both*:** If enabled, the net weight will be printed in both units (pounds and tons or kilograms and metric tons).

3.2.9. Scale Ticket Setup, Continued

***Print MatreX Units*:** Requires additional setup on Units of Measure Setup, see section (3.2.13), and additional MatreX manual #51227.

- Allows printing up to 4 custom units specific to a material type.

These units are user defined units of measure from MatreX. Be sure to setup the precision to use when printing values in these units.

The ID's for the units from MatreX will be needed.

The following settings are for MatreX units. The name and abbr. will come from MatreX, but the precision will not. Enter the ID number of the unit from MatreX and the desire precision.

	Unit ID	Precision
MatreX Unit ID 1:		0
MatreX Unit ID 2:		0
MatreX Unit ID 3:		0
MatreX Unit ID 4:		0

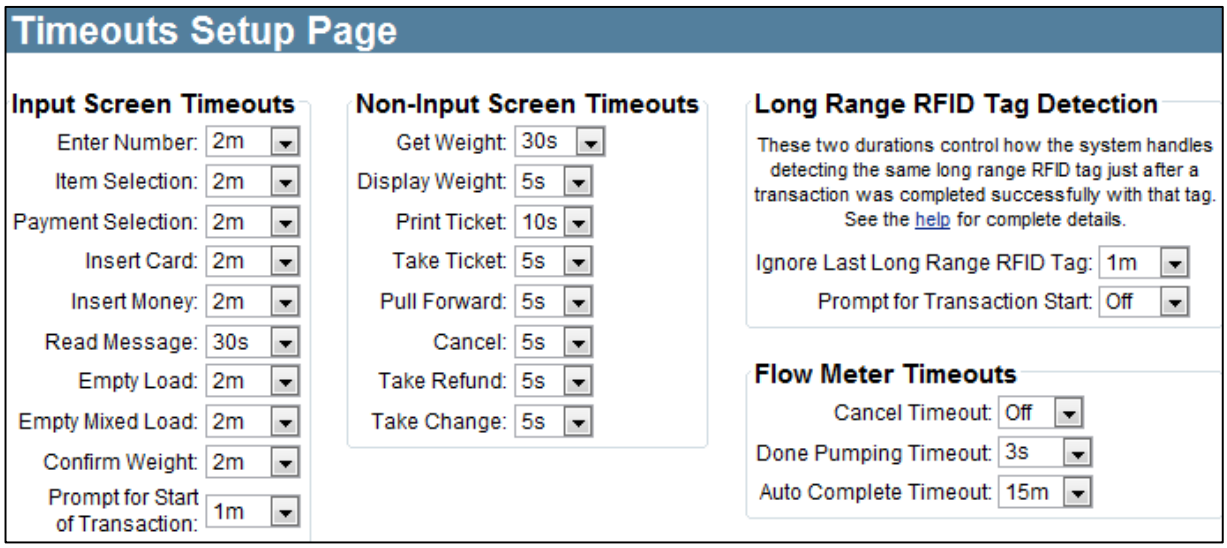
***Ticket Header*:** There is approximately 22 characters per line limit and allows for 4 lines. Each printed at the top of the scale ticket.

***Ticket Footer*:** There is approximately 22 characters per line limit and allows for 4 lines. Each printed at the bottom of the scale ticket.

Off-line Note: Printed at the bottom (before the footer) of the scale ticket when the transaction was offline.

Refund Note: Printed at the bottom (before the footer) of the scale ticket when a cash refund could not be given.

3.2.10. Timeout And Delay Setup



Input Screen Timeouts:

- Enter Number: Timeout value for states that enter numbers
- Item Selection: Timeout value for states that allow selection of information
- Payment Selection: Timeout value for the select payment screen (Not Used)
- Insert Card: Timeout value for states with account or (credit cards-Not Used)
- Insert Money: Timeout value for states that accept cash (Not Used)
- Read Message: Timeout value for messages displayed to customer
- Empty Load: Timeout value for empty load (tare weight) prompt
- Empty Mixed Load: Timeout value for empty mixed prompt
- Confirm Weight: Timeout value for confirm weight screen, 0 sets an indefinite amount of time up to 5min.
- Prompt for Start of Transaction: Timeout value for the screen that prompts the driver if he wants to start another transaction. This screen is associated with detecting the last long range RFID tag after a transaction was completed with that tag. See the Long Range RFID Tag Detection section for more details.

3.2.10. Timeout And Delay Setup, Continued

Non-Input Screen Delays

- Get Weight: Timeout for the get weight screen. Normally as soon as the weight is read from the scale data, the system will advance to the next screen. This timeout will only be used if there is an issue with the scale data. The most often cause of delay is motion on the scale. There will be a message on the screen when motion is detected. To speed this process up you can reduce the required readings setting in the Scale Setup page on the Device Setup menu. Confirm there is a motion status if the require readings is set to 1 (the default is 3).

- Display Weight: Timeout for the display weight screen. This timeout is only used when displaying the weight not confirming the weight.

- Print Ticket: Timeout for the printing scale ticket screen. This screen will advance to the next state once printed is completed. A longer timeout is only a safety net or for displaying an error.

- Take Ticket: Timeout for the take scale ticket screen. This screen can be skipped by setting the timeout to Off.

- Pull Forward: This timeout only applies if the Traffic Control feature is not enabled. If Traffic Control is enabled, this screen is displayed for as long as a vehicle is detected on the scale (detected by weight and possibly sensors if configured). View Pull Forward settings under Input/Output section (3.1.4.3) for more information.

- Cancel: Timeout value for ‘cancel’ screen

- Take Refund: Timeout value for ‘take refund’ screen

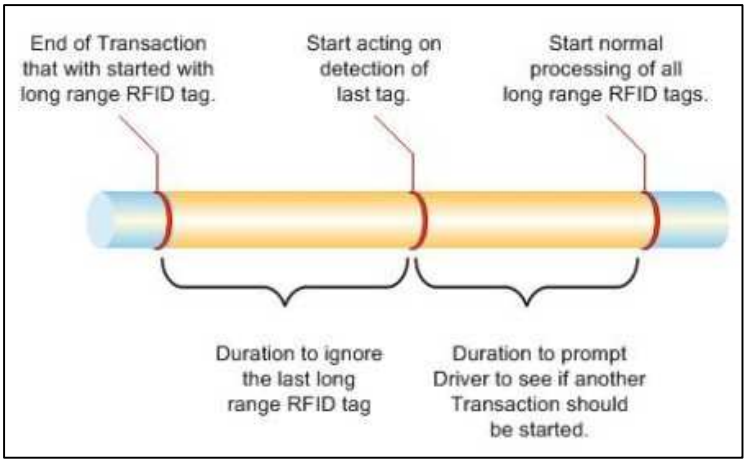
- Take Change: Timeout value for ‘take change’ screen

3.2.10. Timeout And Delay Setup, Continued

Long Range RFID Tag Detection-These settings control how the system handles detecting the same long range RFID tag just after a transaction was completed successfully with that tag.

Ignore Last Long Range RFID Tag: Duration for which the system will ignore a long range RFID tag that matches the long range RFID tag that was used on the last transaction. This duration starts just after the transaction ends. See the timeline below. For example, when a vehicle with an RFID tag completes a transaction, the vehicle will start to drive off the scale. But while driving off, the RFID tag might still be read by the reader. In this case, the ID should be ignored, because the vehicle just completed its transaction. But if the vehicle remains on the scale for some time, that may indicate that the driver wishes to start the transaction again. This setting will determine the amount of time the system will ignore the same long range RFID tag after the end of the transaction.

Prompt for Transaction Start: Duration for which the system will prompt the driver if another transaction should be started. So if the last long range RFID tag is detected again during this duration, the driver will have the option of starting a transaction. This duration starts after the duration of ignoring the tag ends



3.2.10. Timeout And Delay Setup, Continued

Flow Meter Timeouts

Cancel Timeout: When the volume screen is displayed an no volume was recored by the flow meter, the transaction will be canceled after this timeout expires. Default is off. Be sure to allow enough time for the driver to possible move the truck and connect hoses if this timeout is enabled.

Done Pumping Timeout: Once flow is detected by the meter, the system will not allow the driver to complete the transaction as long as there is flow. Often at the end of pumping the flow will go to zero and then start up again. This timeout will keep the system in this state for the configured number of seconds. Default is 15 seconds.

Auto Complete Timeout: After the flow as stopped and the Done Pumping Timeout has expired, the driver can then complete the transaction. If the transaction is not completed, it will be automatically completed when this timeout expires. Default is None.

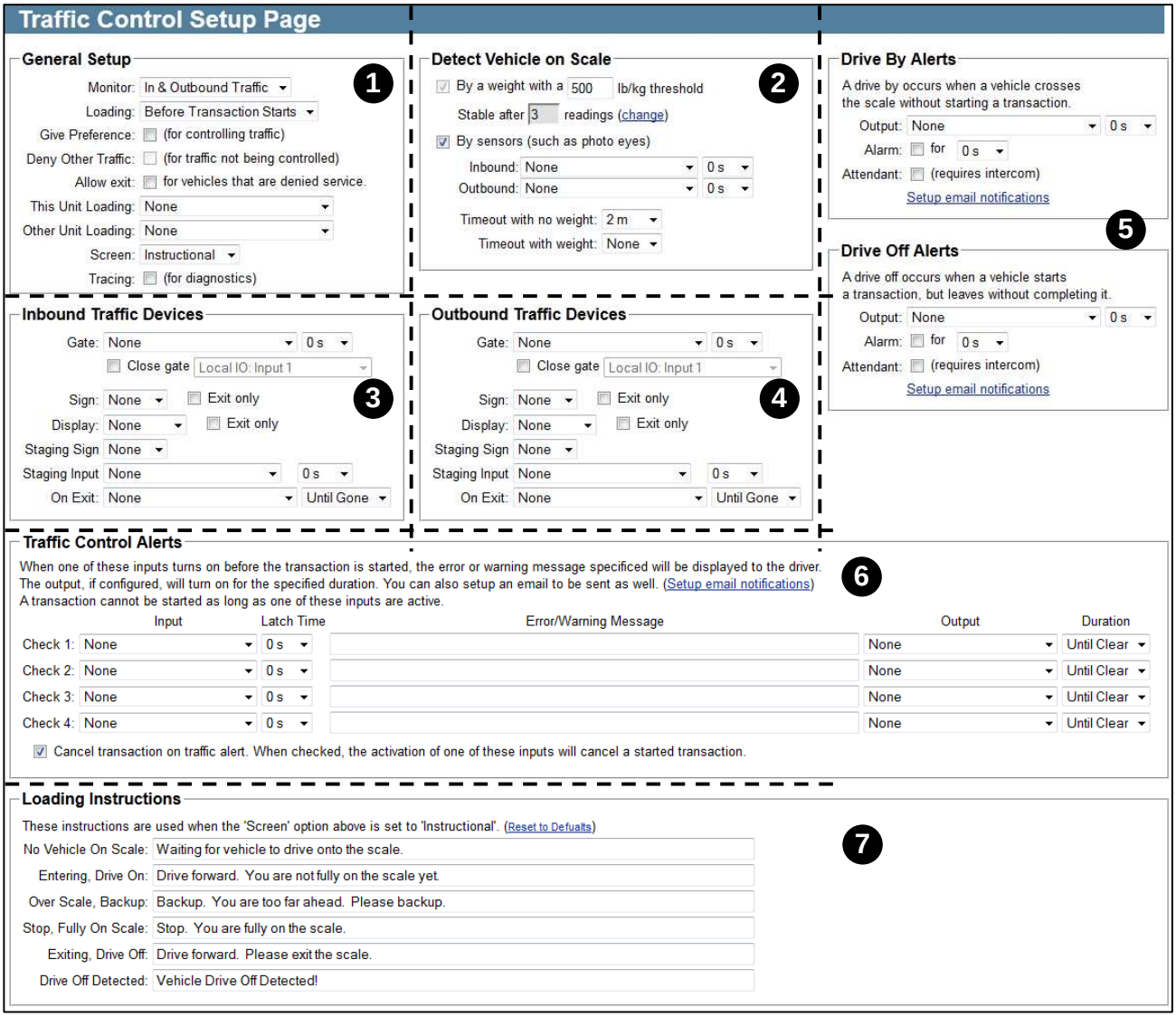
3.2.11. Traffic Control Setup

Traffic Control has two main purposes:

a) Ensure the vehicle is on the scale and that any optional conditions (i.e. radiation detection) are met before a transaction is allowed to be started at the terminal.

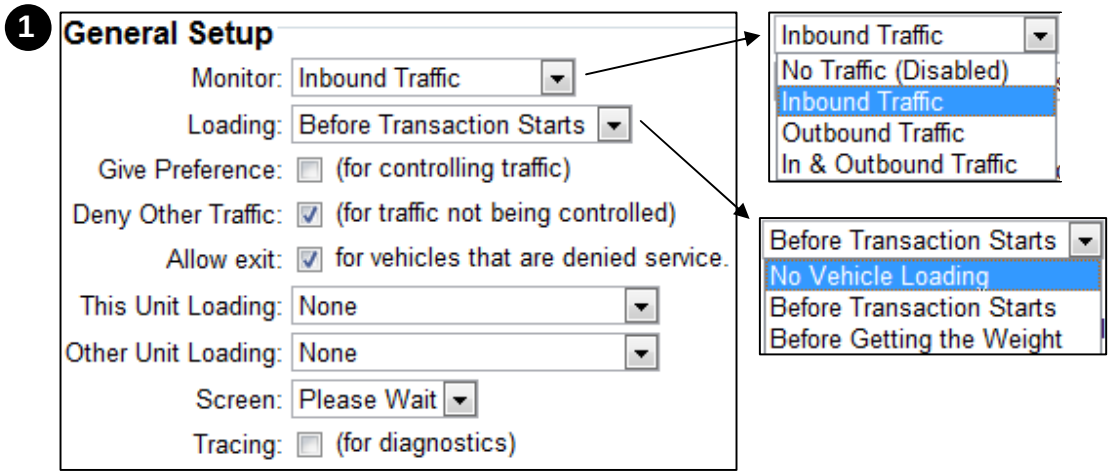
b) Control varioius traffic devices (e.g. signs, gates, lights) to properly control the flow of traffic across the scale.

Sections of entire screen traffic control setup are displayed below. The next set of pages describes the purpose behind each option.



3.2.11. Traffic Control Setup, Continued

SCREEN PORTION 1 General Setup –



Monitor:

- No Traffic – simple in and out weighing without need to stage scale devices.
- Inbound Traffic – Enables inbound Traffic Devices, or section 3 only.
- Outbound Traffic – Enables outbound Traffic Devices, or section 4 only.
- In & Outbound Traffic – Enables Outbound and Inbound Traffic or both 3 and 4

Loading: Determines when the system will guide and check for vehicle on the scale.

- No Vehicle Loading
- Before Transaction Starts- Always use when Access Unit is located on Scale
- Before Getting the Weight- When Access Unit is positioned before scale

Give Preference: Used when two terminals are controlling traffic across the scale. Each terminal is controlling traffic from one direction (inbound / outbound). Checking one of the two will give one of the terminals a preference.

Deny Other Traffic: Generally both inbound and outbound transactions can be done at the same Access Unit, when enabled this is not allowed. The inbound unit can only start a transaction and the outbound can only complete it, otherwise a service denied error will appear.

3.2.11. Traffic Control Setup, Continued

Allow Exit: Associated with Deny Other Traffic, allows a service denied error to be followed with this option and will turn on any traffic devices (lights, gates). This is recommended for unattended sites to allow the rest of the vehicles to be processed.

This Unit Loading: Used when two terminals are controlling traffic across the scale. When the unit is in the process of loading a vehicle on the scale it will turn this output on. This allows the other unit to know that it cannot be process a transaction.

Other Unit Loading: Used when two terminals are controlling traffic across the scale. This unit will only read this output. The other terminal will turn this output on when it is loading a vehicle. That tells this unit that it cannot process a transaction.

Screen: Determines what screen is displayed on the screen when the vehicle is being loaded. In most cases Instructional should be used, and if the Access Unit is not on the scale then None or Please Wait should be used.

Tracing: Turns on additional diagnostic data when terminal is ready or loading a vehicle on the scale. This should not be left on unless troubleshooting an issue.

2 **SCREEN PORTION 2** Detect Weight on Scale - These settings determines how a vehicle is detected to be fully on the scale.

By weight with ##### lb/kg threshold

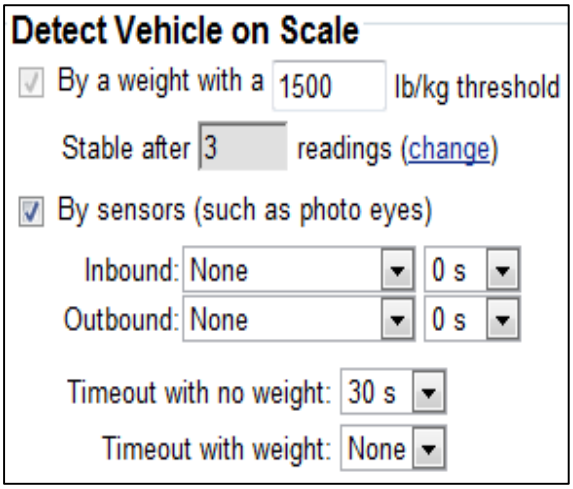
- If weight does not equal or exceed set ####, then vehicle not present.

  Stable after ###### readings (change)

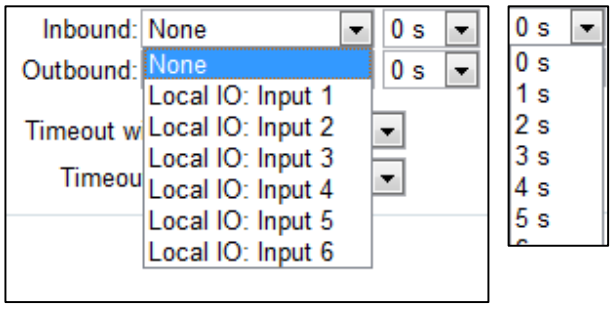
- Number of consecutive and identical reads to determine if weight is stable.

  By sensors (such as photo eyes)

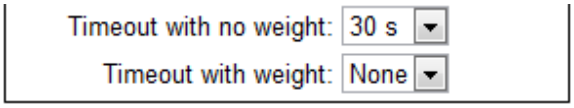
- Inbound and Outbound both have a input selection and latch time in “s”.



3.2.11. Traffic Control Setup, Continued



Screen Capture shows Input selections and latch times. Not shown but latch goes from 0-30 seconds.



Timeouts –

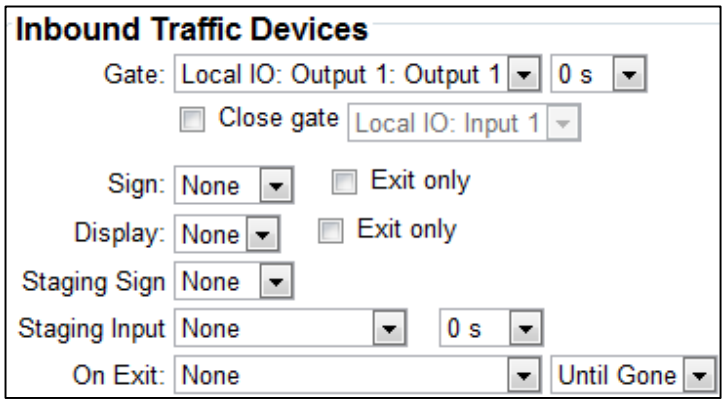
- **Timeout with no weight**

If a vehicle is detected but then there is no weight on the scale this timeout will determine how long the system will wait before going back to waiting for a vehicle to arrive.

- **Timeout with weight**

If there is weight on the scale this timeout will apply. Generally this should be set to "None" to allow the driver all the time he needs to start the transaction.

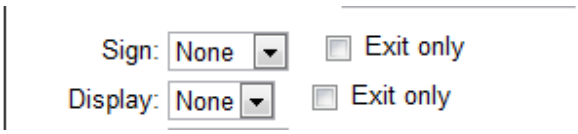
3 **SCREEN PORTION 3** Inbound Traffic Devices



3.2.11. Traffic Control Setup, Continued

Gate: Select an output that will be connected to a gate. Also specify how long to keep the output on.

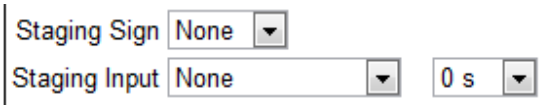
Close gate: When enabled, the Access terminal will close the gate when the selected input is detected. The input should be a sensor near the gate that will detect the vehicle. The duration time is then used to make sure the gate is open for at least the specified number of seconds. It also keeps the gate open until the vehicle is detected by the sensors near the gate.



Sign: This is a sign (configured on the Device Setup menu), that will direct the vehicle onto and off of the scale.

Display: This is a remote display (configured on the Device Setup menu), that will direct the vehicle onto and off of the scale.

Exit only: When enabled, the exit only option on the sign or display will change the device to only direct a vehicle off of the scale.



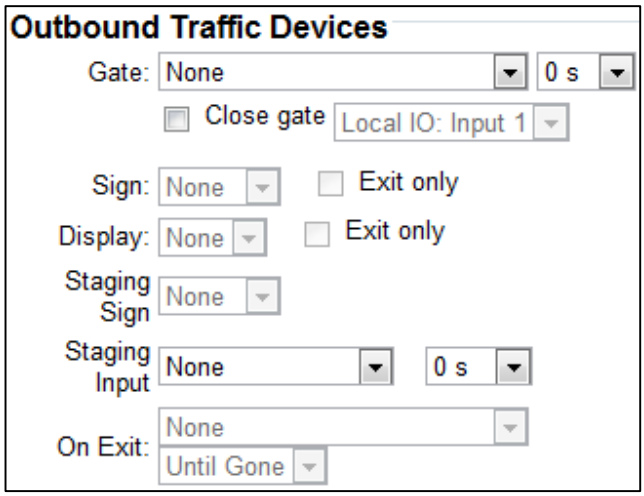
Staging Sign: This is a sign (configured on the Device Setup menu) located in the staging area that will indicator to any waiting drivers that the scale is available to be used.

Staging Input: Associated with a sensor (usually a ground loop) that will detect a vehicle in the stage area. A latching time can also be applied to the input. This is often necessary and should be set based on the distance from the sensor to the scale. The longer the distance the longer the latch time should be.

3.2.11. Traffic Control Setup, Continued

On Exit: When a vehicle is directed to exit the scale an additional output can be activated. This output can be turned on for a set duration or until the vehicle is gone (based on the settings in the Detect Vehicle on Scale).

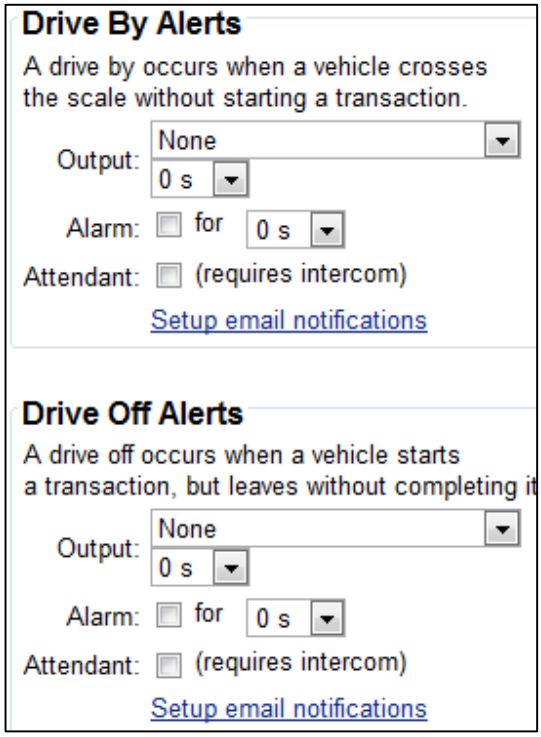
4 **SCREEN PORTION 4** Outbound Traffic Devices



Options are identical to the Inbound Traffic Devices on Region **3** but controlling the opposite flow of traffic.

3.2.11. Traffic Control Setup, Continued

5 SCREEN PORTION 5 Drive By and Drive Off Alerts



These alerts occur when a transaction is not started (Drive By) or started and not completed (Drive Off). Each alert has the same configuration options.

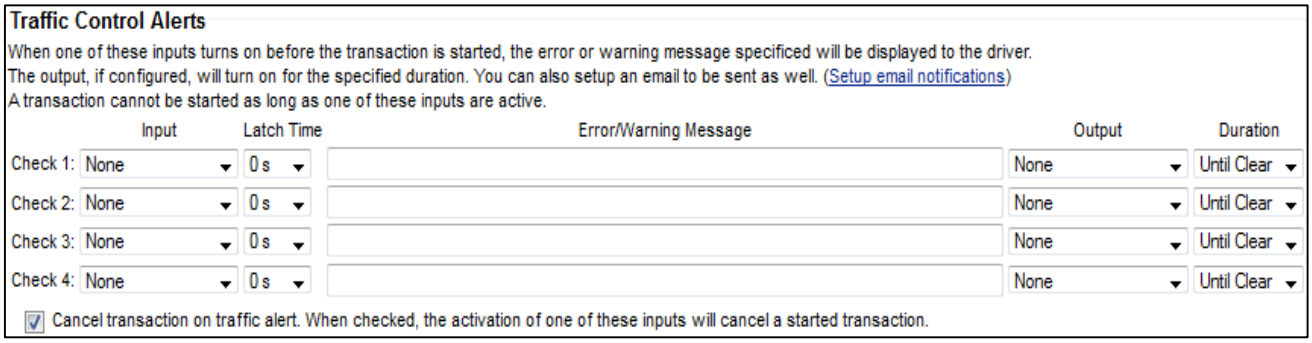
Output: When the alert occurs an output can be turned on for the specified number of seconds.

Alarm: The system alarm can be sounded for a few seconds.

Attendant: If an intercom is connected with a call option, the attendant can be alerted through the intercom.

Email: An email will be sent to anyone subscribed for this email.

6 SCREEN PORTION 6 Traffic Control Alerts

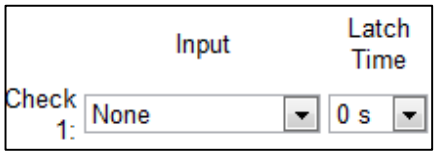


Traffic control alerts are general inputs to the terminal that will prevent a transaction from starting and optionally from completing once started. They should be used when

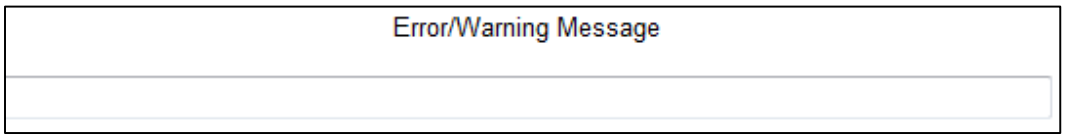
the Loading setting is set to Before Transaction Starts. Up to 4 alerts can be configured.

3.2.11. Traffic Control Setup, Continued

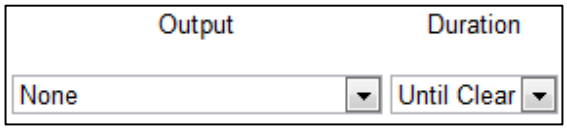
Each one will have the following options:



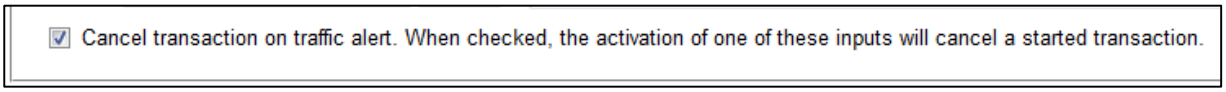
Input & Latch Time: This is the input that will trigger the alert. An optional latching time can be configured on the input as well. A latching input will remain on for the set duration after the actual input turns off.



Error/Warning Message: This message will be displayed to the driver on the screen. The screen option in the general settings must be set to Instructional for these messages to be displayed to the driver. This message will also be included in the notification if email subscription is set to monitor Traffic Control Alerts.



Output & Duration: An output can be turned on when an alert occurs. It can be turned on for a set duration or for the entire duration of the input including the latch time.



Cancel transaction on traffic alert:

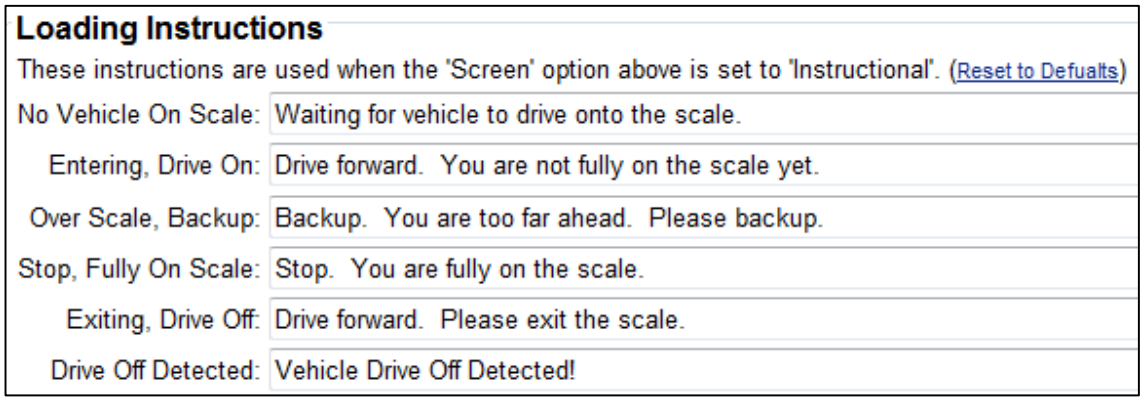
This option allows correction to bad staging of equipment and positioning of input devices such as down range or sensitive long range reader equipment.

Example Site:

- Radiation positioning was directly on the approach of the scale.
- Long Range reader was positioned down range of scale to start transaction
- Truck crept onto the scale slowly to verify tag reads.
- Threshold weight was reached so Welcome Screen, appeared to allow start of transaction.
- Radiation detector completed scanning and found radiation but only after transaction started. Checking this option will check after transaction starts as well.

3.2.11. Traffic Control Setup, Continued

7 **SCREEN PORTION 7** Loading Instructions, only applies if selection for Instructional was selected from screen portion **1**



No Vehicle on Scale: This instruction will be displayed when there is no vehicle on the scale and no vehicle detected near the scale.

Entering, Drive On: This instruction will be displayed when a vehicle is detected entering the scale but it is not fully on the scale yet. This can only be detected if there are sensors to detect the vehicle, not just a weight on the scale.

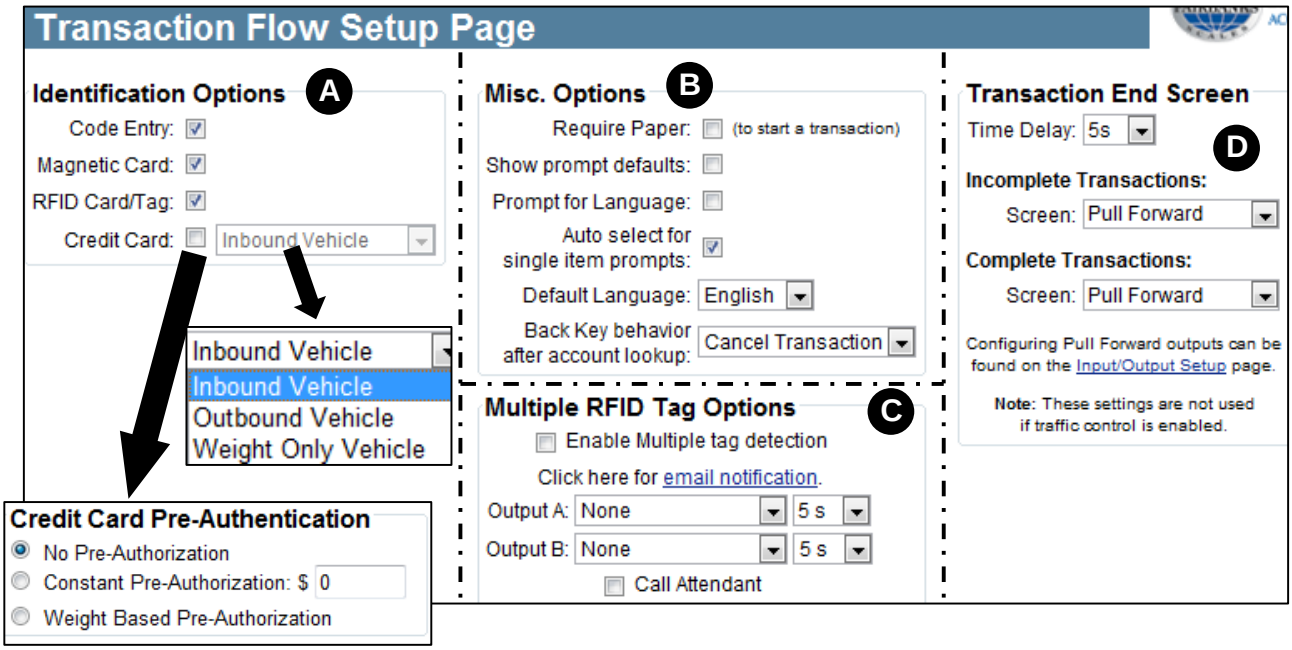
Over Scale, Backup: This instruction will be displayed when a vehicle has driven onto the scale too far. This can only be detected if there are sensors to detect the vehicle, not just a weight on the scale.

Stop, Fully On Scale: This instruction will be displayed when the vehicle is fully on the scale and not been by the sensors at either end of the scale.

Exiting, Drive Off: This instruction will be displayed when the transaction is complete and the vehicle should pull forward off of the scale. This will remain until the vehicle is gone.

Drive Off Detected: This warning will be displayed when a Drive Off/By is detected.

3.2.12. Transaction Flow Setup



A Identification Options: Enable or disable how the driver can start transactions on an Access Terminal.

- Code Entry: Use a specific account code to start the transaction.
- Magnetic Card: Allow a configured magnetic key card to start transactions.
- RFID Card/Tag: Allow short and long range RFID to start transactions.
- Credit Card:If selected a credit card will start a transaction with below options:
- Credit Card Pre-Authorization: Transactions started with a credit card must be associated with one of the Unknown Vehicles in MatreX.
  - ➢ No Pre-Authorization- starts transaction, without charging preauthorization
  - ➢ Constant Pre-Authorization- starts with set preauthorization amount
  - ➢ Weight Based Pre-Authorization- starts with amount based on weight

B Misc. Options:

- Require Paper: Transaction will not occur without printer loaded and working.

  Show prompt defaults: Shows stage of transactions that are assumed otherwise.

3.2.12. Transaction Flow Setup, Continued

- Prompt for language: Forces manual entry customers to select a language.
- Auto select for single item defaults: Less button presses when only one item to choose.
- Default language: Forces one of three programmed languages (English, Spanish, and French).
- Back key behavior after account lookup: sets functionality of back key on Access Unit.

C Multiple RFID tag options:

- Enable multiple tag options: Enables this detection feature. This feature should only be used for RFID readers that broadcast multiple tags that are detected (Pegasus).
- Email Notifications: When multiple tags are detected, an email can be sent. Setup this notification via the Email Setup page.
- Outputs: When multiple tags are detected, two outputs can be turned on for a specified duration.
- Call attendant: When multiple tags are detected, an attendant can be notified via an integrated intercom.

D Transaction End Screen:

These settings allow the last screen of a successful transaction to be changed. The options are None, Pull Forward, and Remain on Scale. There are separate settings for incomplete and complete transactions. Note that the pull forward outputs will only work when Pull Forward screen is used. Also these settings are not used when Traffic Control is enabled (Pull Forward is always used for Traffic Control).

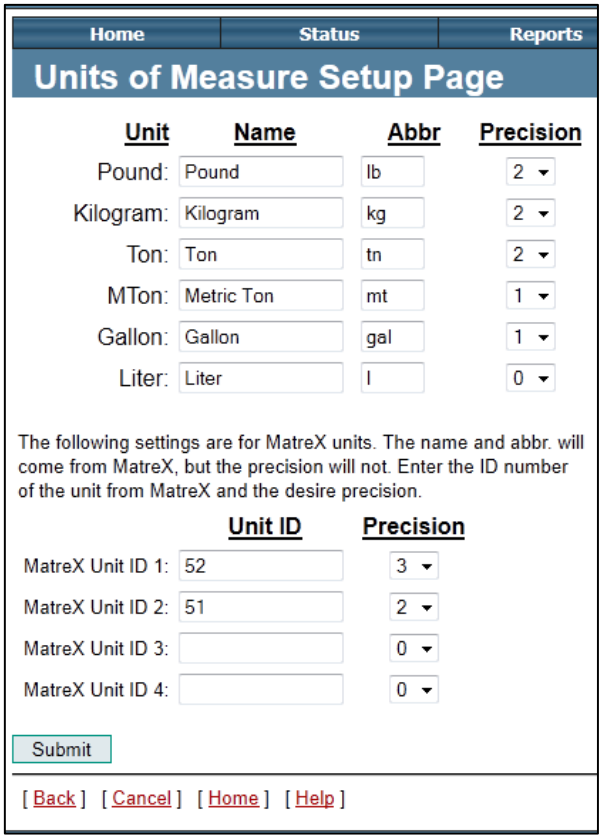
- Time Delay: Set the delay for the end screen. This is the same timeout value that is labeled Pull Forward on the Timeout and Delays page.
- Incomplete Transactions: Set the end screen for incomplete transaction. i.e. the weigh in stage of a weight in/out transaction.
- Complete Transactions: Set the end screen for complete transactions.

3.2.13. Units Of Measure

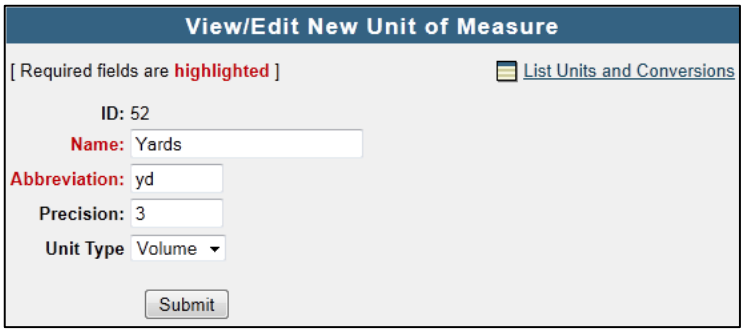
Page configures the name, abbreviation, and precision of weight types.

The MatreX unit feature allows multiple custom units of measure to be used reflected upon the settings in MatreX.

The Unit ID is specific to the 'id' given from the MatreX web application.



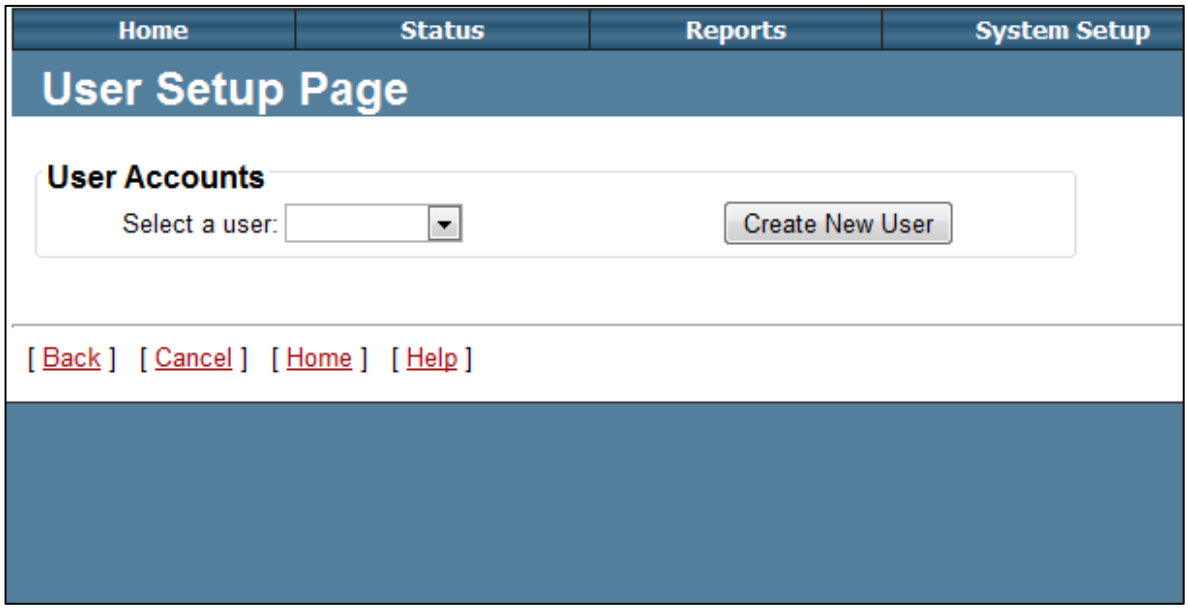
Captured from the MatreX application, the predefined ID#, is shown. This ID is the reference for the access unit to print on scale ticket the converted unit of measure.



References section (4.3.6) of MatreX manual #51227

3.2.14. User Setup

User Setup allows user to create, edit, and delete user accounts for Access Terminal. Accounts are then used to access service and diagnostic menus of Access Terminal.



USER ACCOUNTS

- Select a user: Use the drop down menu to select a current user.
- Create New User Button: Press the Create New User button to create a new user.

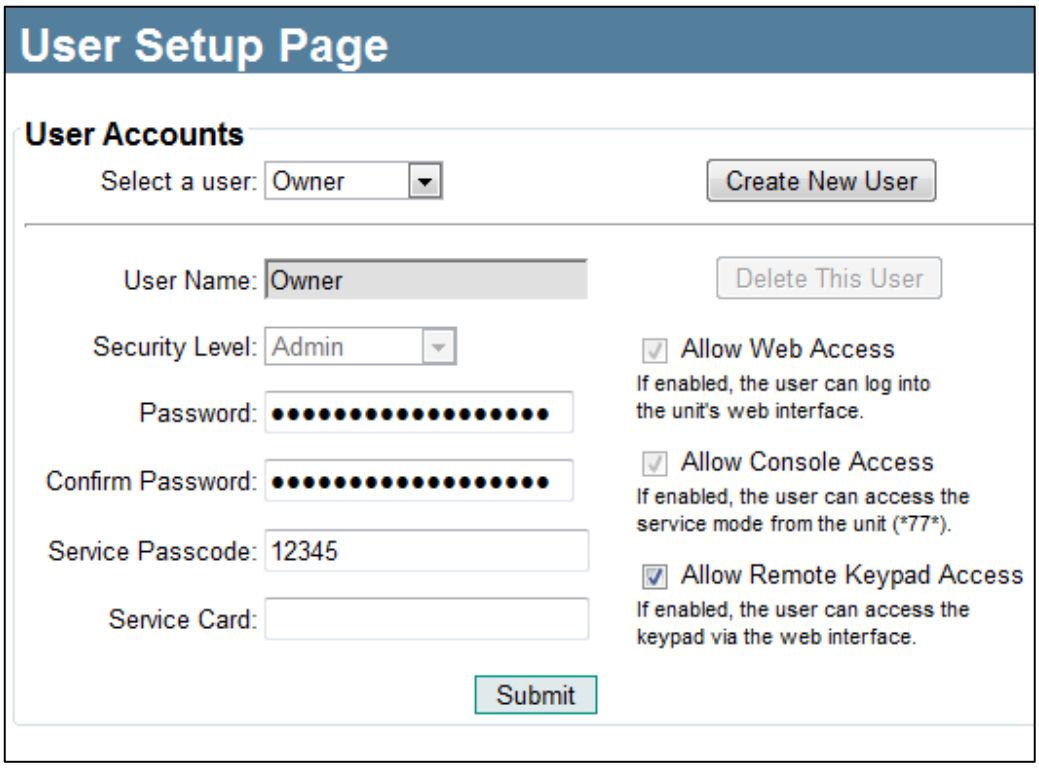
User Setup Create New User/Edit User

User Setup allows users to edit previously created users or add new users.

3.2.14. User Setup, Continued

USER ACCOUNTS

- **Select a user**: Uses the drop down menu item selected from the previous screen.



- **Username**: User name of account; used when logging into Access Terminal web interface.

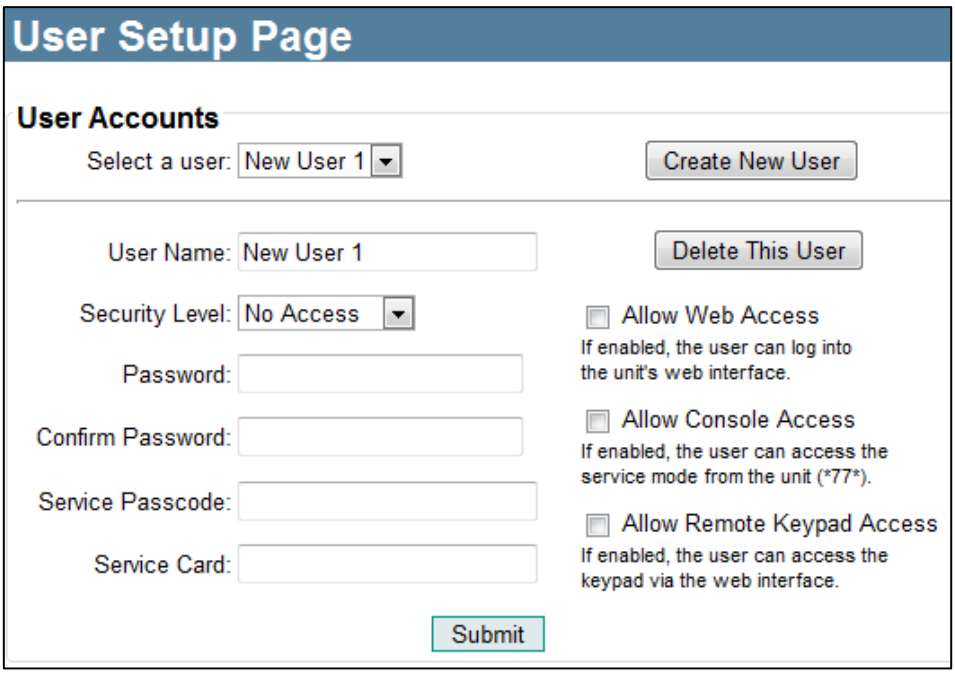
- **Security Level**: Access level granted to user.

- No Access – A user with this security will be denied access to both the terminal console and the terminal's web interface. Use this level to "disable" a user without having to permanently remove the user.

- Maintenance – A maintenance user can quickly place the terminal into Maintenance mode. When entering into service mode at the console of the terminal either via a *77* code or a service card, the terminal will not go into service mode, but instead automatically toggle to or out of Maintenance mode. It is recommended to not allow this user access to the web interface.

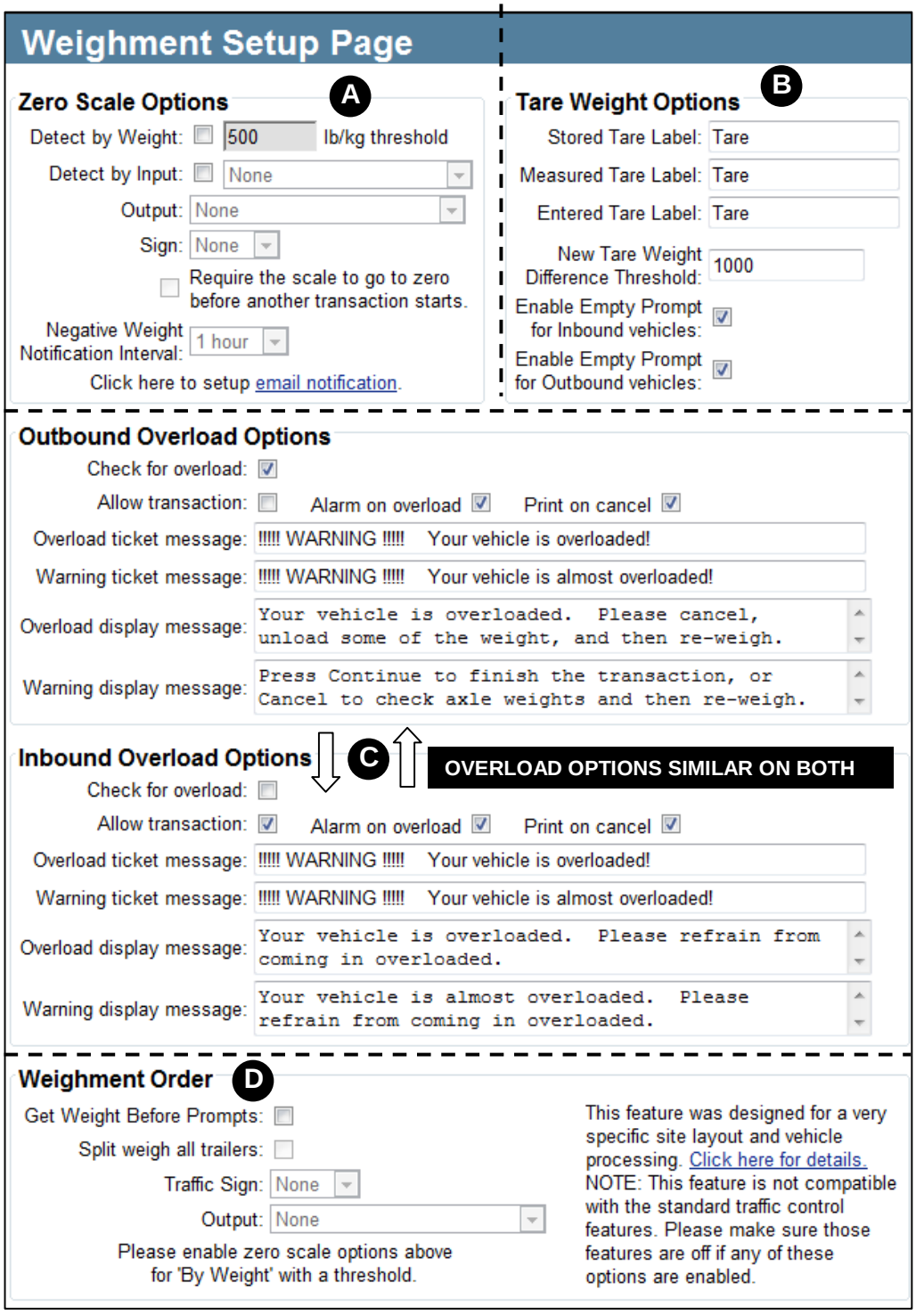
3.2.14. User Setup, Continued

- **Service** – A user that has full access to the service menus at the console of the terminal and almost full access to the terminal's web interface. This user will be denied access to the following areas:
    - ♦ Credit Card Reports
    - ♦ User Setup
- **Admin** – A user that has full access to the service menus at the console of the terminal and full access to the terminal's web interface.
- **Password**: Only available in Edit Users Setup screen and used when logging into Access Terminal local web interface.
- **Confirm Password**: A pass code used to enter service and diagnostic menus of Access Terminal; it must be 5 numerical digits.
-
- ***Allow Web Access*:** If enabled, user is granted web browser access to the Access Terminal.
- ***Allow Console Access*:** If enabled, the user is granted web browser access to the service mode of the Access Terminal (*77*).
- ***Allow Remote Keypad Access*:** If enabled, user is granted keyboard access to Access Terminal.



- ***Delete This User:*** If user selects Delete, the user selected from drop-down menu upon pressing the Submit button will be deleted.

3.2.15. Weightment Setup



3.2.15. Weightment Setup, Continued

A

Zero Scale Options

The zero scale option has 3 main features:

1. Control an output or sign based on the scale being zero (or close to zero).
2. Ensures the system goes back to zero (or close to zero) before the next transaction can start. This capability is also available by enabling Traffic Control and vehicle loading as well. But for less complicated sites this one could be used instead.
3. Send email notifications when the scale weight goes negative (beyond the negative value of the threshold).

A zero scale can be detected in one of two ways by weight with a threshold. The scale is considered zero of the weigh is greater than or equal to the negative of the threshold weight and less than or equal to the positive threshold weight. The second way is based on an input from the scale indicator. When the input is on, the scale will be considered zero.

Detect By Weight: Detect a zero scale based on the weight from the scale indicator. A weight threshold can also be set such that if the absolute value of the weight is less then this threshold, then the scale is considered to be zero. That means if the scale weight is negative and greater than the negative value of the threshold, the scale is not zero.

Detect by Input: Detect a zero scale based on an input. This input is usually from the scale indicator.

Output: An output can be turned on when the scale is zero. The output will remain on the entire duration that the scale is zero.

Sign: Control a sign based on when the scale is zero. The sign will use the stop signal when the scale is not zero and the go signal when the scale is zero.

Require the scale to go to zero before another transaction starts: In order to meet NTEP requirements, the scale must go to zero before the next transaction is allowed to start. Enabling this feature will ensure those checks are made.

Negative Weight Notification Interval: An email notification can be sent every so often when the scale is reading a negative weight. This can be done through the email subscripts on the Email Setup page. The frequency of the email is set here. The default is every hour.

3.2.15. Weightment Setup, Continued

B **Tare Weight Options**

Stored Tare Label: Set the text label to use for a tare weight that is stored with the vehicle

Measured Tare Label: Set the text label to use for a tare weight that is measured or read from the scale.

Entered Tare Label: Set the text label to use for a tare weight that is entered by the driver.

New Tare Weight Difference Threshold: This threshold is used when a driver is getting a new stored tare weight for a vehicle. If the new tare weight is within (+/-) this threshold of the old stored tare weight no confirmation is needed. Otherwise if the difference of the new and old weights is greater than this threshold, then the driver must confirm the use of the new stored tare weight.

Enable Empty Prompt for Inbound vehicles: This setting enables the "Empty Load" prompt. Basically this setting enables the ability for a driver to get a new stored tare weight for the vehicle. This setting applies to only vehicles that use stored tare weights and for vehicles that are marked as inbound vehicles in MatreX.

Enable Empty Prompt for Outbound vehicles: This setting is the same as above but for only vehicles that are marked as outbound vehicles in MatreX.

C **Inbound and Outbound Overload Options**

These two sections allow the terminal to check for and act on vehicles that weigh more than their maximum gross weight. The maximum gross weight of the vehicle is setup in MatreX on the Vehicle View/Edit page for each vehicle. The inbound and outbound does not refer to the vehicle inbound/outbound flag. In this case it refers to when the vehicle is arriving at the facility (inbound) or when the vehicle is leaving the tacitly (outbound).

Check for overload: Enable this option to check for vehicles that are over their maximum allowed weight. This maximum weight is assigned to each vehicle in MatreX. There are separate but identical settings for vehicles that are entering (inbound) or exiting (outbound) the facility.

Allow transaction: If enabled, the transaction will be allowed to complete. The driver will still be warned and have the option to not complete the transaction.

Alarm on Overload: Sound Alarm

3.2.15. Weightment Setup, Continued

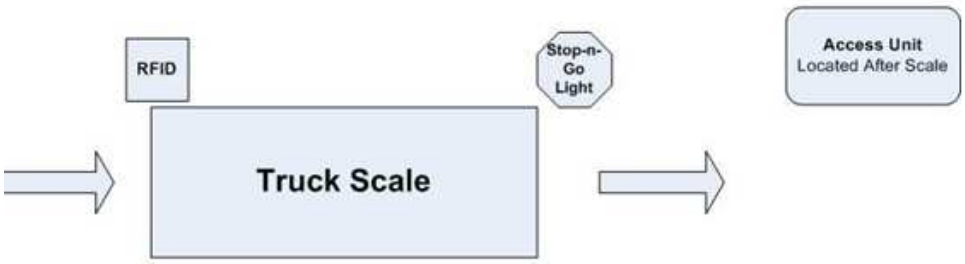
Overload ticket message: This is a message that will be printed on the scale ticket if the vehicle is overloaded.

Warning ticket message: This is a message that will be displayed on the screen if the vehicle is close to being overloaded. This requires a threshold weight to be set along with the maximum weight in MatreX for the vehicle.

Overload display message: This is a message that will be displayed on the screen if the vehicle is overloaded.

Warning display message: This is a message that will be displayed on the screen if the vehicle is close to being overloaded. This requires a threshold weight to be set along with the maximum weight in MatreX for the vehicle.

D **Weighment Order-** Designed for a very specific site layout and vehicle processing. The Access Unit is located ahead of the scale. View the diagram and process before continuing.



Process:

In the Idle state (when the scale and Access unit are not in use), the light will be green or a green up arrow. As a truck approaches the scale, the long range RFID reader will read the tag on the truck and start the transaction at the Access unit (if a smart sign is used, the green up arrow will start to flash slowly). The truck then drives onto the scale. Once the weight on the scale exceeds the weight threshold, the light will turn red or to a red X. Once the truck is fully on the scale and stops, the Access unit will read the weight and then turn the light green or to a green up arrow (if a smart sign is used the green up arrow will flash more rapidly). The truck will drive forward to the Access unit. Once the weight on the scale drops below the weight threshold, the sign will turn red or to a red X (if a smart sign is used, the red X will flash slowly). The driver then uses the Access unit to complete the transaction by entering any information that is requested by the Access unit (material, location, trailer, etc). Once the transaction is complete, the system will return to the idle state and wait for the next vehicle.

The Access unit can be configured to split weigh all trailers. So if it is a small scale, when the truck pulls onto the scale only the truck will be on the scale. Once told to pull forward, the truck will do so but it will leave the trailer on the scale. Then the driver will finish the transaction at the Access unit. The Access unit will always get the trailer weight from the scale if a trailer is selected at the Access unit. The weights will be added together to get a total gross weight. The tare weight of the truck and the tare weight of the selected trailer will be added together to get the total tare weight for the truck and trailer. (*Note: based on the process above, the sign will be a green up arrow while the trailer is on the scale.*)

3.2.15. Weightment Setup, Continued

NOTE:
Not compatible with the standard traffic control features. Please make sure those features are off if any of these options are enabled.

Get Weight Before Prompts: Enable this option to have the terminal get the weight before the prompts are displayed to the driver

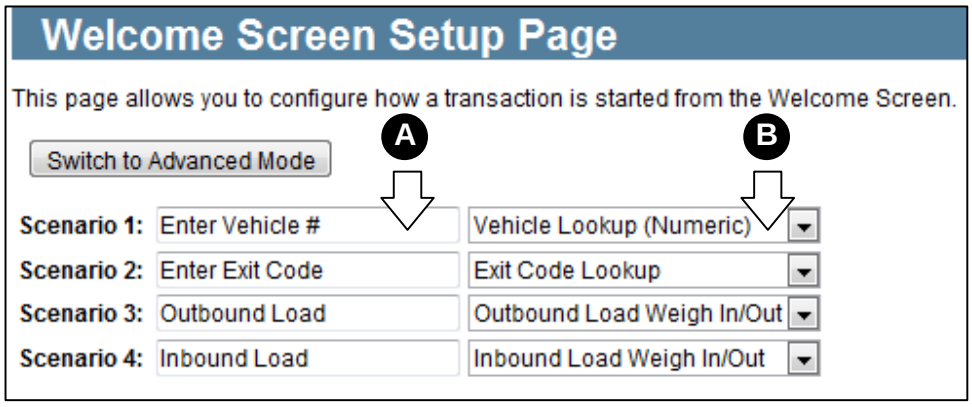
Split weigh all trailers: This requires a trailer that does has no or little tongue weight on the vehicle. The vehicle will pull onto the scale (but not the trailer) and start the transaction. The system will get the vehicles weight. Then the vehicle will pull ahead so that only the trailer is on the scale. The driver will then answer prompts at the terminal. The terminal will then get the weight of the trailer and finish the transaction.

Traffic Sign: Select a sign to guide the driver across the scale.

Output: Select an output to control a light or gate to guide the driver across the scale.

3.2.16. Welcome Screen

Simple Mode

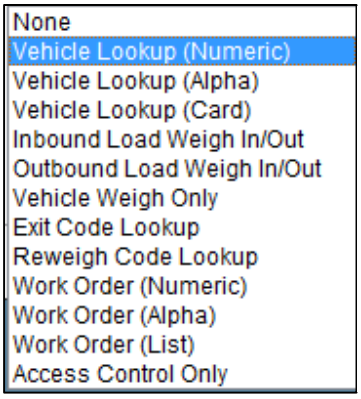


The above capture shows the default 4 scenarios. In Simple mode each scenario has only 2 items, a message to appear to the driver and a behavior.

A Line message visible on the display screen

B Behavior selected when key pressed in line with line message

Capture shows items in Behavior dropdown **B**

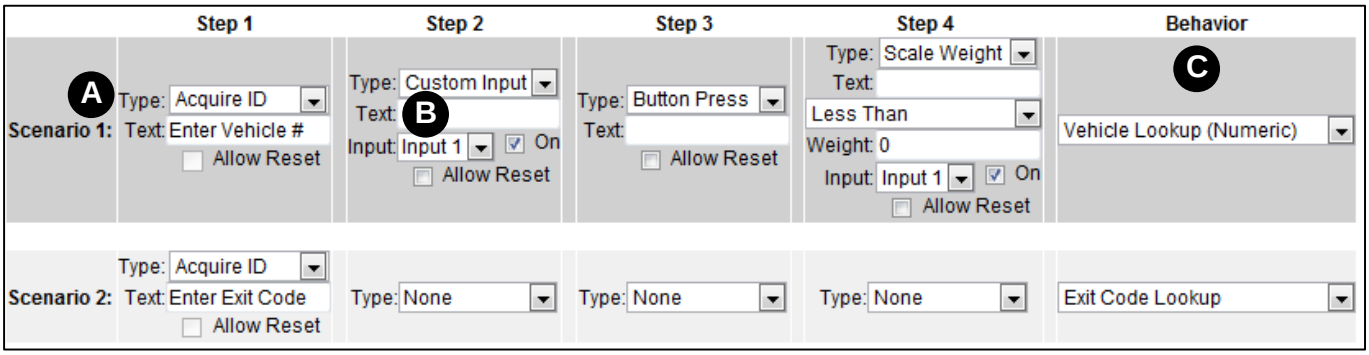


3.2.16. Welcome Screen, Continued

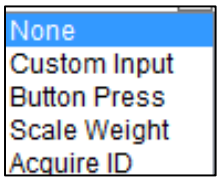
ADVANCED OPTION

Captured shows the Welcome Screen using advanced options. Note previous simple mode only had 2 items being the on screen text and the behavior. The advanced mode has the type of action, text, and a behavior as a final result.

- Any chosen scenario requires at least <u>one</u> of the 4 steps to be populated with a type of action and a behavior. Example Scenario 1, shows each action type except for the "none" item, with a final outcome "behavior being Vehicle Lookup Numeric".
- Scenario 2 uses the Acquire ID Option, with all other steps set to none and a behavior of "Exit Code Lookup". If the types of actions used are only for acquiring an ID and no other steps are used then a better approach would have been the simple mode for this site.

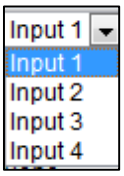


A



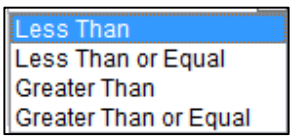
Type has 5 options that scenario 1 shows in steps 1,2,3,4 and "None" in Scenario 2.

- None: no action is taken
- Custom Input:



This condition will wait for the specified input to turn on (or off) before going on to the next step.

- Button Press: This condition will wait for the button associated with the scenario (selection key) before going on to the next step.
- Scale Weight:



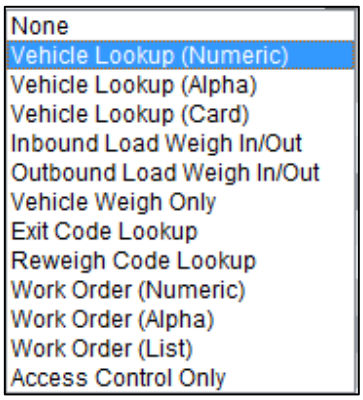
Checks for a certain amount of weight to be on the scale before going on to the next step.

3.2.16. Welcome Screen, Continued

- Acquire ID: This is the final step after all other conditions are met. At this point the driver can enter or present vehicle identification.

B 

Type is text and limited to the characters used on a single line on the display

C 

Behavior list shown below, this is the expected outcome of the staging area.

Vehicle Lookup (Numeric) / (Alpha) / (Card): With this option the driver identifies the vehicle via the keypad (numeric or alpha-numeric) or a card (magnetic swipe or RFID card). The transaction will be based on how the vehicle is configured in MatreX. NOTE: Any time a number is keyed in or a card is swiped without making a selection at the welcome screen this option will be used.

(Inbound) / (outbound) Load Weigh In/Out: When using MatreX, this option is used for vehicles that do not have an account. Transactions started by selecting this option will be associated with the Unknown Inbound Vehicle or the Unknown Outbound Vehicle in MatreX. This type of transaction will also generate an exit code that is used during the weigh out stage of the transaction. When integrated with Soft-Pak, this will generate a list of vehicles for the driver to choose from. When integrated with Paradigm, this will be associated with Paradigm's cash customer.

Vehicle Weigh Only: When using Matrex, this option is used for vehicles that do not have an account and are not doing a typical transaction. This case the vehicle is just getting a weight from the scale. Depending on how MatreX is configured, the driver may need pay before getting this weight.

Exit Code Lookup: When this option is select, the terminal will prompt for an exit code. This is used to complete transactions for Unknown Vehicles in MatreX. NOTE: The exit code can be entered at the welcome screen without selecting this option.

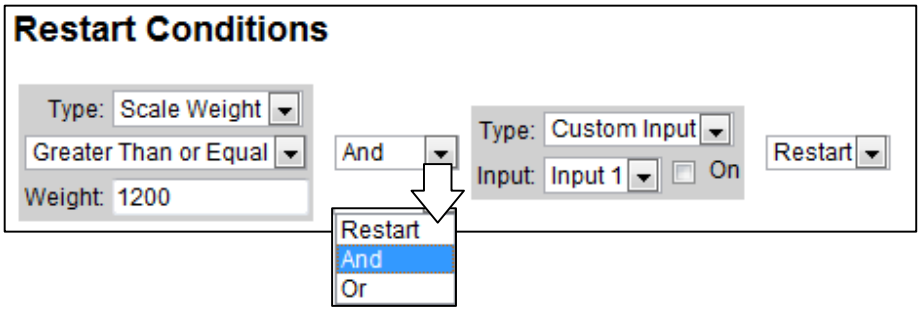
3.2.16. Welcome Screen, Continued

Reweigh Code Lookup: When this option is select, the terminal will authorize a re-weigh. The re-weigh code is given out for vehicles that only get a weight from the scale instead of a typical transaction.

Work Order (Numeric) / (Alpha) / (List): A work order is a type of transaction that is related to a particular job. There is an ID for this job and once completed it cannot be done again. A work order can be entered via the keypad as an alpha-numeric or numeric value. It can also be selected from a list of outstanding work orders. This option is currently only available with Soft-Pak integration.

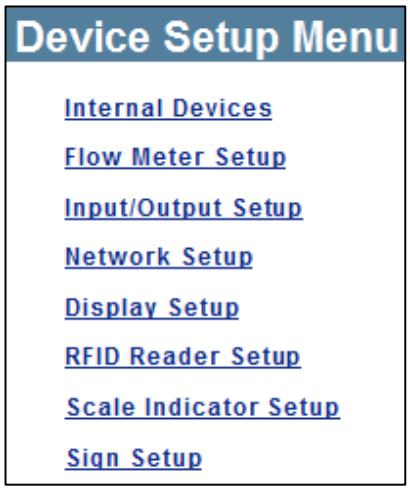
Access Control Only: If the vehicle only needs access control to a location, this option is used. Identification must still be provided in any format (keypad, card, etc).

Restart Conditions: The restart conditions are used to put all scenarios back into its initial step. For example, if the conditions are triggered based on scale weight and vehicle drives across the scale but does nothing at the terminal, the terminal should restart the conditions when the vehicle leaves the scale. The two options are Custom Input and Scale Weight as described above.



3.3. Device Setup Menu

The Device Setup Menu contains multiple information setup links. This menu's main focus is configuring installed devices, if any.

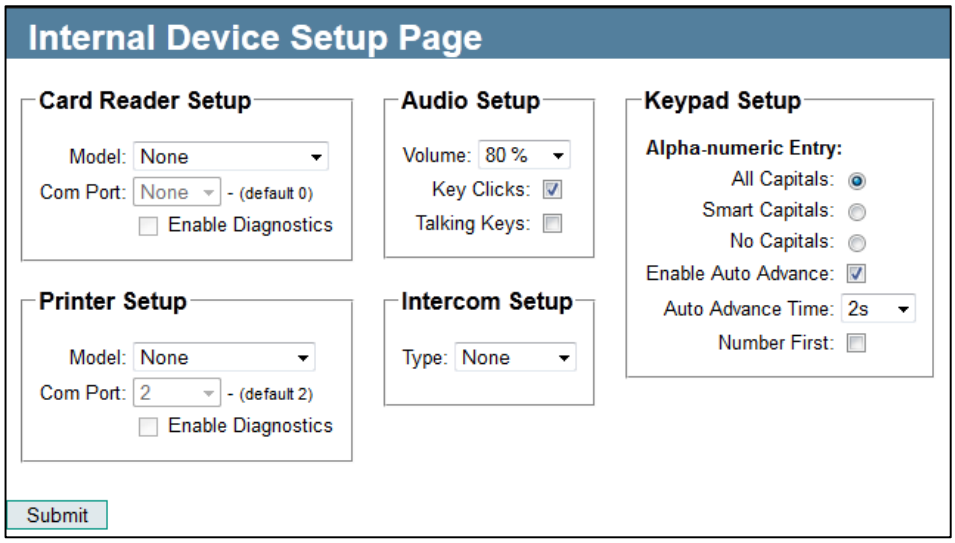


The following section contains the following pages.

- Internal Devices
- Flow Meter Setup
- Input/output Setup
- Network Setup
- Display Setup
- RFID Reader
- Scale Indicator
- Sign Setup

3.3.1. Internal Devices

Internal Devices Setup permits programming for a card reader, printer, intercom, audio, and keypad setup in the software.



Card Reader Setup: Uses TTL communication instead of a serial port.

Printer Setup- Default set to COM Port 2, can also use ports: 3 and 4 if available.

Audio Setup

- Keypad Clicks: Turns on/off audio clicks for any pressed key on keypad
- Talking Keys: Turns on/off audio for any pressed number keys on keypad; example: when 4 number key is pressed, a verbal audio annunciates four

3.3.1. Internal Devices, Continued

Key Pad Setup

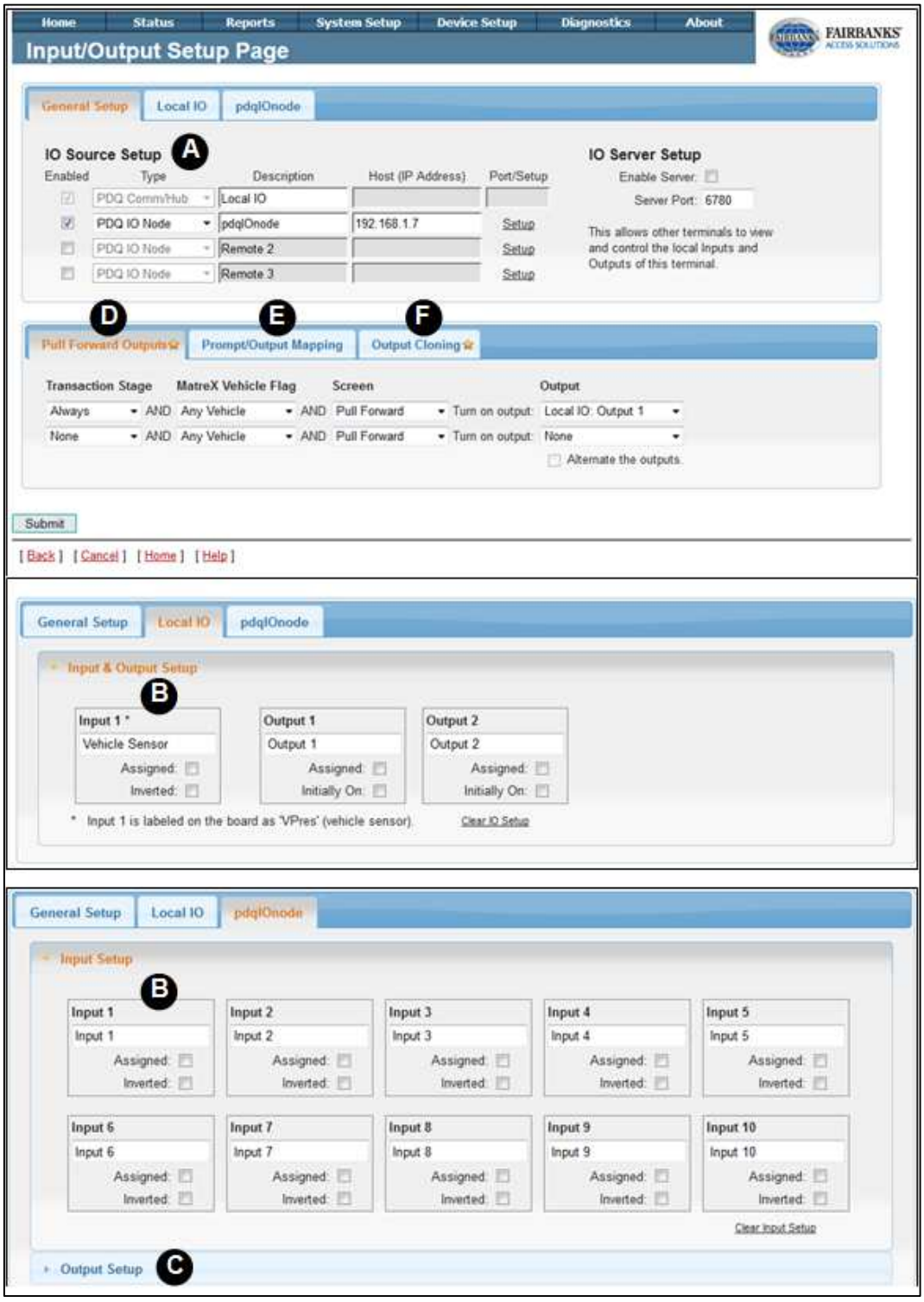
- Capitals: Determines how capitals are used for alphanumeric entry. Options include: All Capitals, Smart Capitals (1st character of line and after a space is capitalized), and No Capitals.
- Enable Auto Advance: If selected, cursor automatically advances to next character (after a period of time) when a key is pressed
- Auto Advance Time: Time used for auto advanced feature

- Number First: When enabled the number will come up first instead of the alpha character. For example, normally when entering alpha-numeric data pressing the #2 key will show A, pressing it again will show B, again and it will show C, and again after another press it will show the number 2. But when this is checked, the number 2 will be show first.

Intercom Setup: Intercom Setup allows user to select type of intercom connected to system; set to pulse if using the internal intercom system.

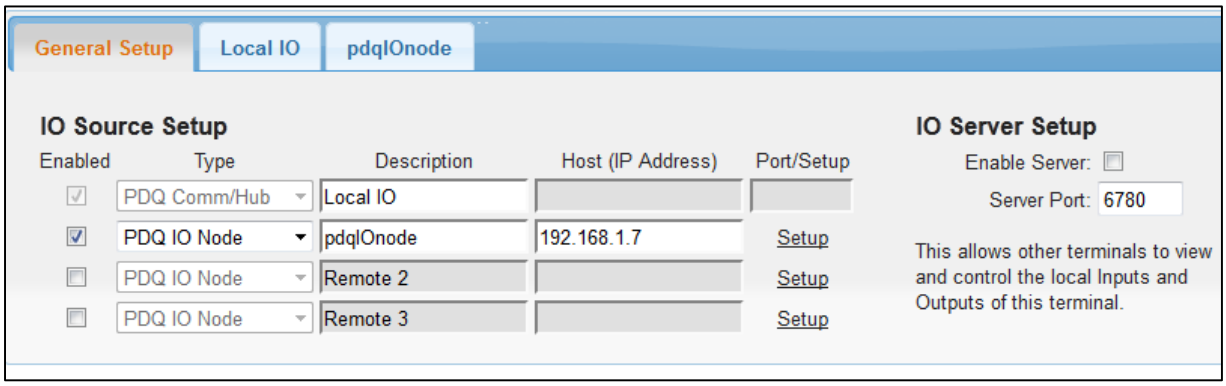
3.3.2. Input/Output Setup

Input/ Output Setup page includes 6 different sections that are broken up in the following labels (A, B, C, D, E, and F).



3.3.2. Input/Output Setup, Continued

A General Setup



- **Enable Source**: IO data can come from a number of locations. The first source is the IO that is available internally within the Access terminal. Additional IO can come from other Access terminals or other IO devices. Up to three additional devices can be configured.
- **IO Source Type**: This is the type of IO device the IO is coming from. PDQ IO Node is supplied as the main IO board with a default of 10 controllable outputs. Modbus IO is any device that has IO via the modbus protocol. The IO Lan D4 is a modbus based device.
- **Description**: Provide a short description of the IO source. This will be used on this page as well as the IO diagnostic page to identify the IO source.
- **Host**: Most external sources of IO are accessed via the network. Provide the host name or IP address of the device that has the IO.
- **Port / Setup**: For network based devices provide the TCP/UDP port to connect to on the device for IO data. For modbus based devices a setup link will be provided to configure how the terminal reads the IO via the modbus.

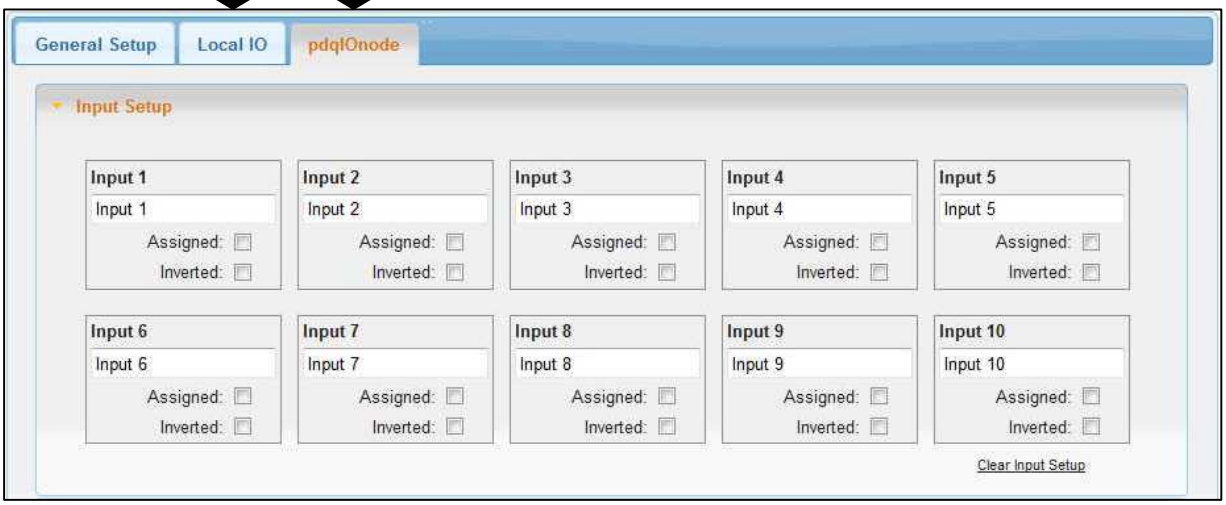
IO Server Setup

- **Enable Server**: When this option is enabled, other terminals can access the IO on this terminal.
- **Server Port**: Provide a UDP port number that will provide the IO data from this terminal.

3.3.2. Input/Output Setup, Continued

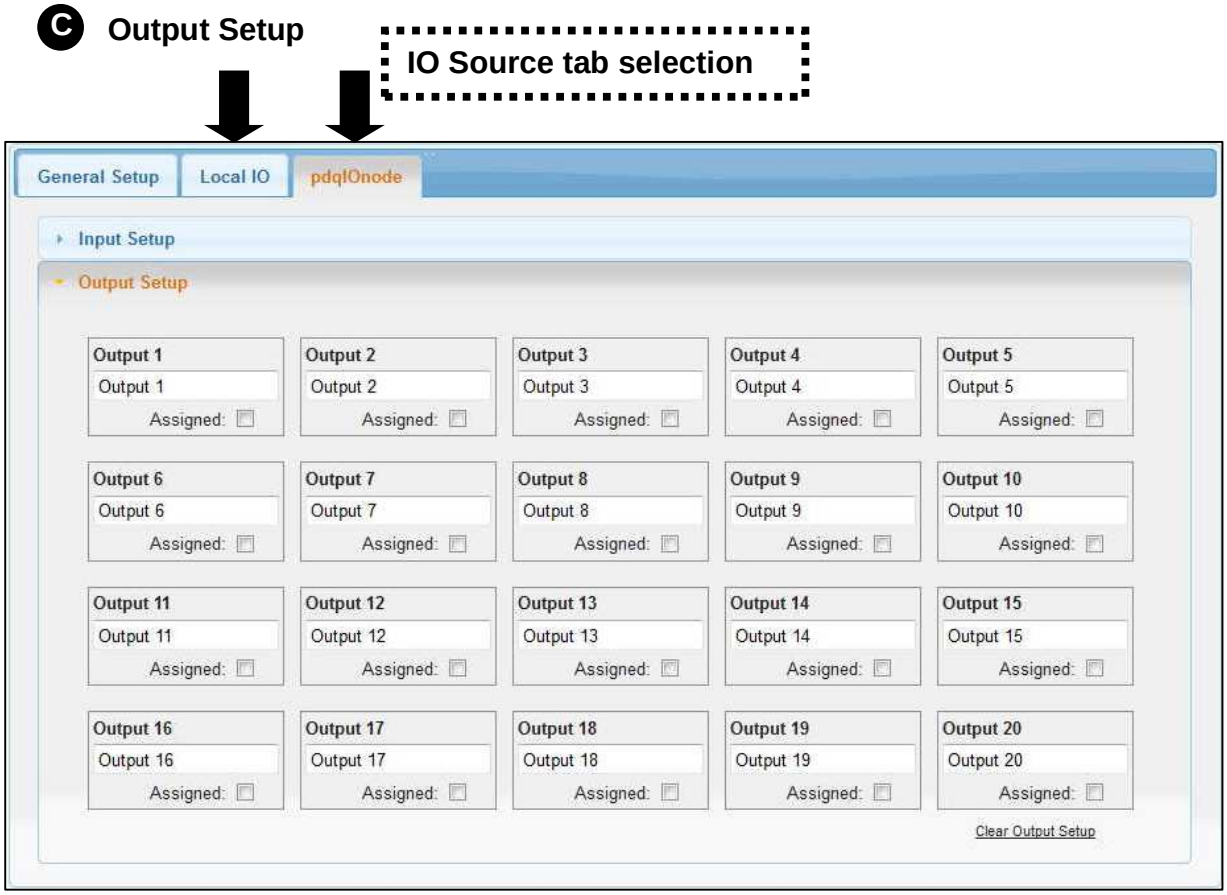
B **Input Setup**

IO Source tab selection



- **IO Source**: Select the input source that you want to configure from the selection of configured tabs. The number of inputs will vary based on the IO source.
- **Input Label**: Enter a brief label. This will be displayed on the diagnostic page and any drop-down lists for selecting inputs.
- **Assigned**: Check this option if the input is assigned to an action. It is recommended to check this setting whenever the input is being used. The input should also be given a short label as well. Once “assigned”, then the label will be used instead of just the generic “Input 1” in dropdown lists.
- **Inverted**: If the input is inverted, enable this option to invert it back. For example, if the input is normally on and turns off during an action, then enable this option so that the input will be normal (normally off).

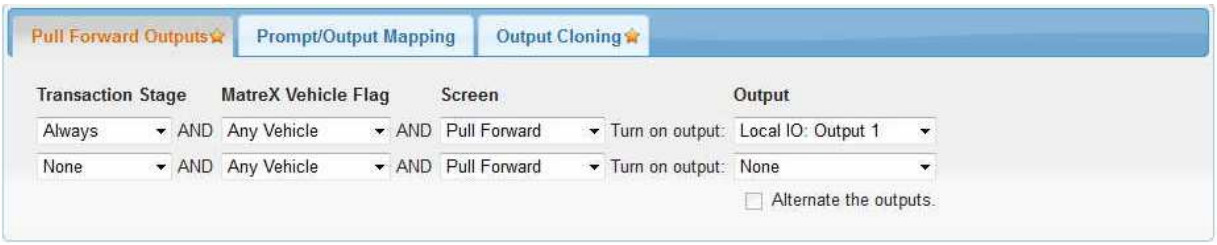
3.3.2. Input/Output Setup, Continued



- **Output Source**: Select the input source that you want to configure from the selection of configured tabs. The number of outputs will vary based on the IO source.
- **Output Label**: Enter a brief label. This will be displayed on the diagnostic page and any drop-down lists for selecting outputs.
- **Assigned**: Check this option if the output is assigned to an action. It is recommended to check this setting whenever the output is being used. The output should also be given a short label as well. Once “assigned”, then the label will be used instead of just the generic “Output 1” in dropdown lists. This output will be highlighted in the IO diagnostics as well.
- **Initially On**: Enable this option if the output should be on when the system is started.

3.3.2. Input/Output Setup, Continued

D Pull Forward Outputs

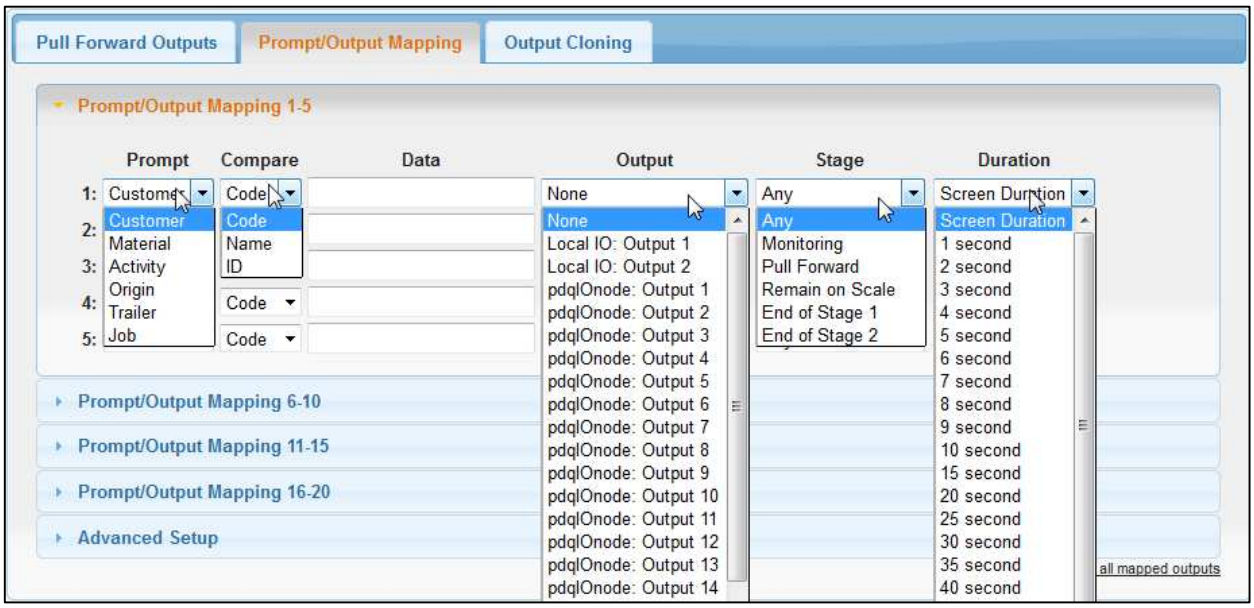


The pull forward outputs are turned on for the duration of the Pull Forward screen at the end of the transaction. Typical setup is for Always and any Any Vehicle so the output will always trigger during the Pull Forward screen. To control the output conditionally use the conditions described below.

- **Transaction Stage**: This refers to the weigh in/out process. The On Start option refers to weigh in stage, On Complete option refers to the weigh out stage.
- **MatreX Vehicle Flag**: This refers to the type of vehicle in MatreX as to whether it is marked as an Inbound or Outbound vehicle.
- **Output**: Select the output to turn on during the Pull Forward screen. The duration of the Pull Forward screen is configured on the Timeout and Delay Setup page.
- **Alternate Outputs**: Enable this option to alternate between the two outputs for each transaction.

3.3.2. Input/Output Setup, Continued

E Prompt/Output Mapping



Prompt Output Mapping allows the driver prompt selections to trigger an output specific to a driver response at the Access Terminal.

Prompts

There are six prompt types; Customer, Material, Activity, Trailer and Job which require a group setup for any of the 6 to allow an output to map a behavior.

Compare

Comparison can be made by three types; Code, Name and ID.

Data

The data field is user entered to match one of the comparison types.

Output

Output list all available output locations that can be toggled for a specific prompt.

Stage

There are six possible stages; Any, Monitoring, Pull Forward, Remain on Scale, End of Stage 1, End of Stage 2.

3.3.2. Input/Output Setup, Continued

Stage:

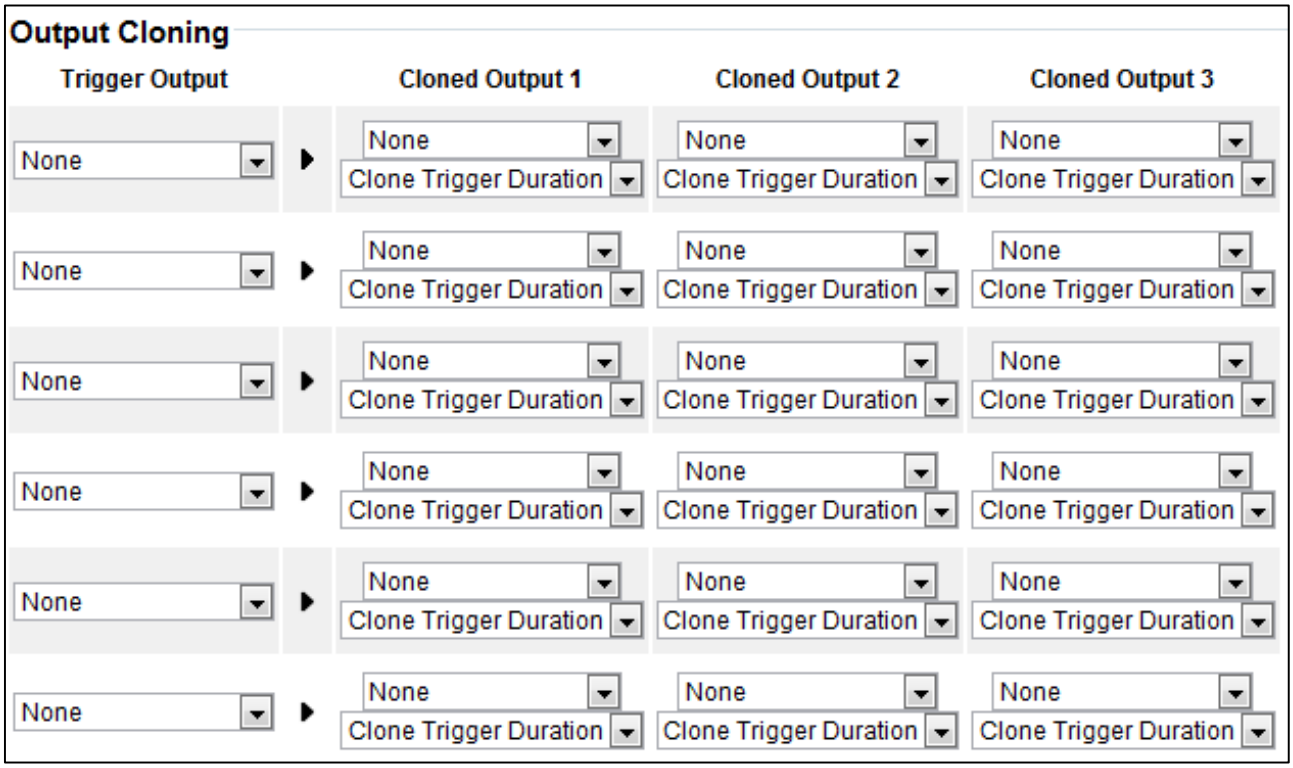
- Any
- Monitoring
- Pull Forward
- Remain on Scale
- End of Stage 1
- End of Stage 2

Duration:

Determines how long each set output will stay active.

3.3.2. Input/Output Setup, Continued

F Output Cloning



Up to 3 outputs can be enabled from an initial trigger output. When the trigger is turned on or off the clone outputs mimics the trigger outputs behavior with the benefit of trigger duration to the cloned response.

3.3.2. Configurations for PDQ IO node

Note:

There are 2 network hubs located on the com hub board, both are located on the bottom right edge of the board and labeled; (Internet) hub1, and (Vlan1, Vlan2, Vlan3) hub2.

The (2) Network Hub connections allows multiple devices to be connected on two separate subnets allowing privacy from the rest of the local area network. The only way for the Access Terminal to recognize this is using the dual homing feature under section Secondary IP Settings.

A common setup to allow multiple devices to be used by the Access Terminal would be to place:

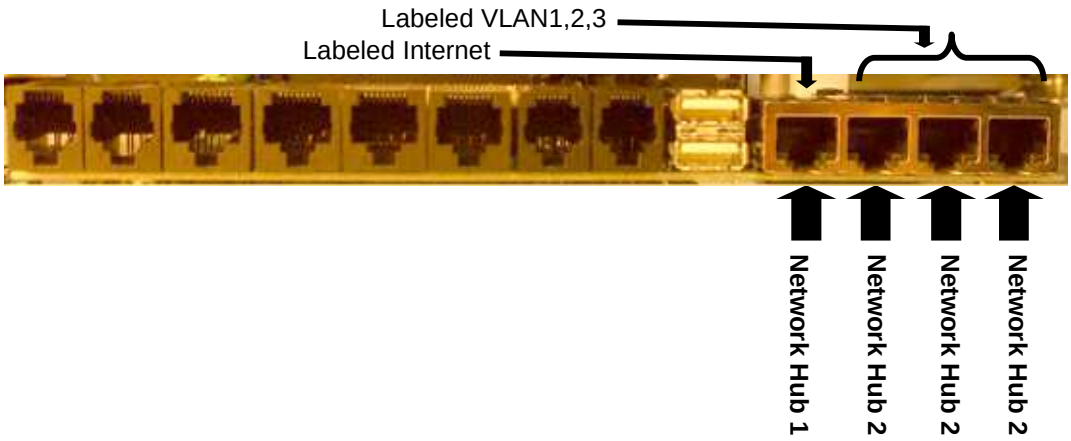
- (Internet) the IO node connection in the internet socket

- (VLAN1, 2, 3) the Local Area Network (Ethernet) and auxiliary network devices (IP cameras etc…) in the VLAN sockets

1. Verify network connectivity from one of 2 network hubs on the com board has been made.

   (Using a standard (1) IO node setup)

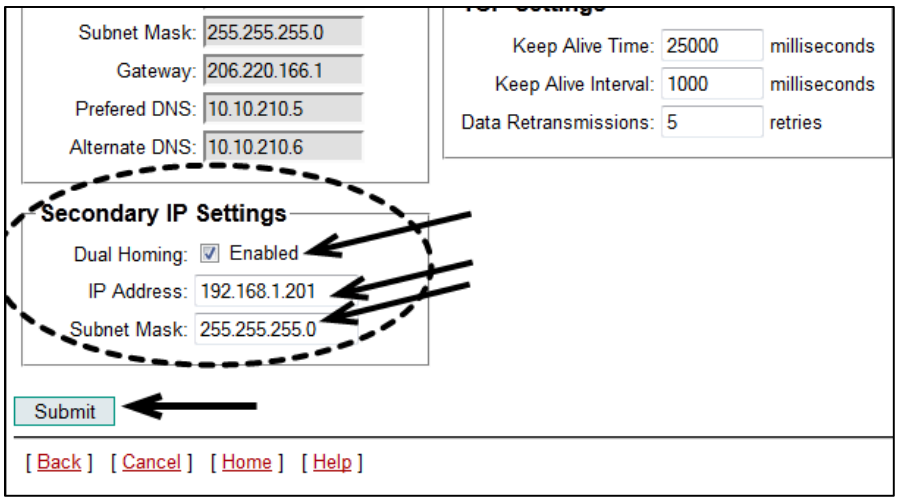
   - Place the IO node cable in the Internet socket.
   - Place the network cable for the site in VLAN1, 2, 3.



3.3.2. Configurations For PDQ Io Node, continued

2. Verify network communications setup includes enabling of dual homing.

   To locate section go to Home >> Device Setup >> Network Setup.



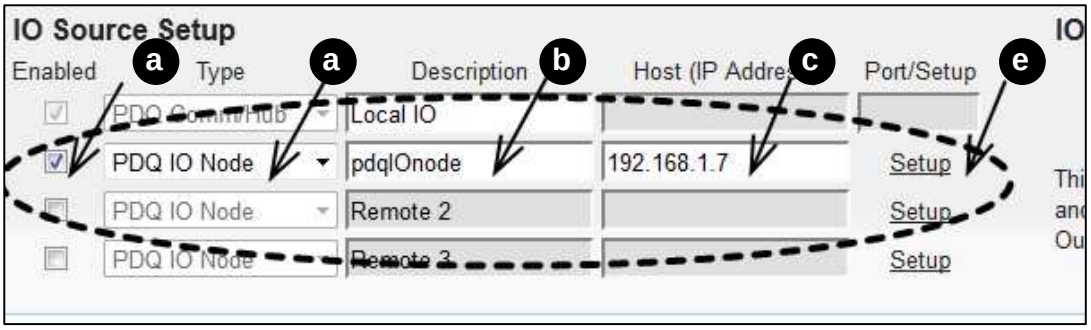
   a. Insert subnet of 192.168.1.x where x is the last octet of the Titan FBAS IP address.

   b. Insert subnet mask of 255.255.252.0

   c. Click Submit to save changes

3. Verify Input/output setup including the PDQ IO Node device.

   To locate section go to Home >> Device Setup >> Input/ Output Setup.



   a. Enable checkbox and select PDQ IO Node

   b. Create a description ex. pdqIonode.

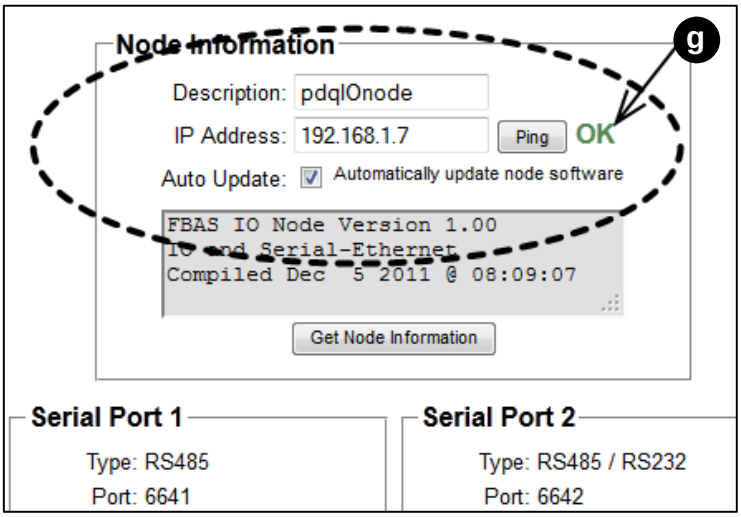
3.3.2. Configurations For PDQ Io Node, continued

c. Insert factory default IP of 192.168.1.7

d. Click Submit to save changes.

e. Locate and click on the Setup link.

f. Click Ok to the unsaved changes dialogue box.



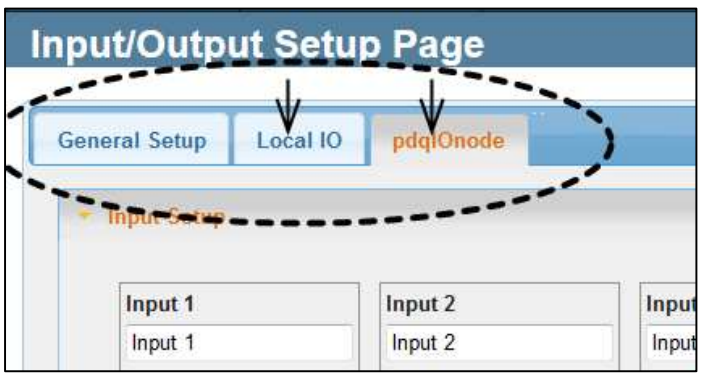
g. Verify connectivity by locating and clicking on Ping.

4. Set the IO node labels for both i/o.

   a. To locate section go to Home >> Device Setup >> Input/ Output Setup.

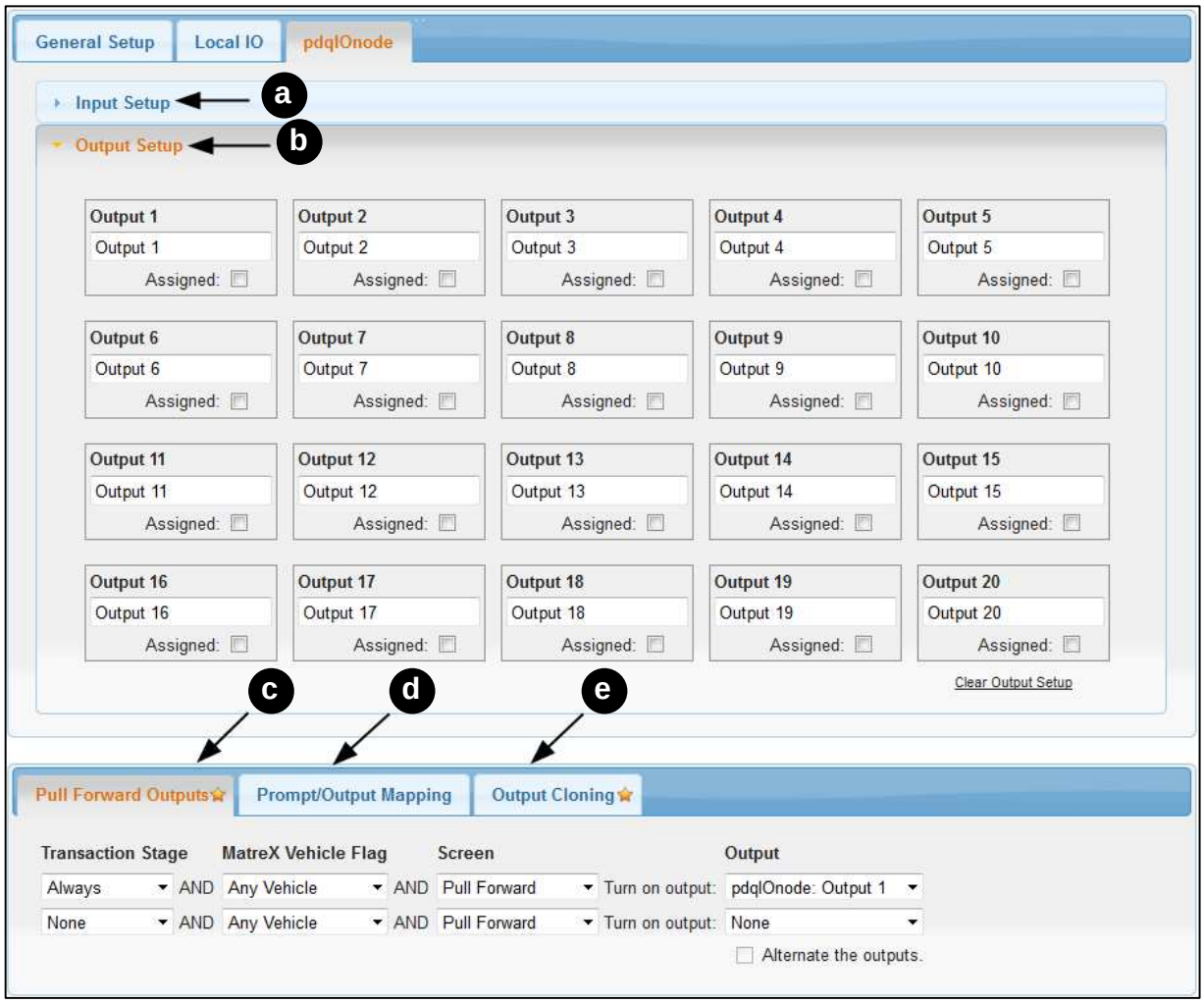
5. Select the I/O device labeled “pdqIOnode” from the above tab region

*note the pdqIOnode tab reflects a custom entry to describe the PDQ IO node.



3.3.2. Configurations For PDQ Io Node, continued

6. Select from I/O regions: a, b, c, d, e



a. Input Setup

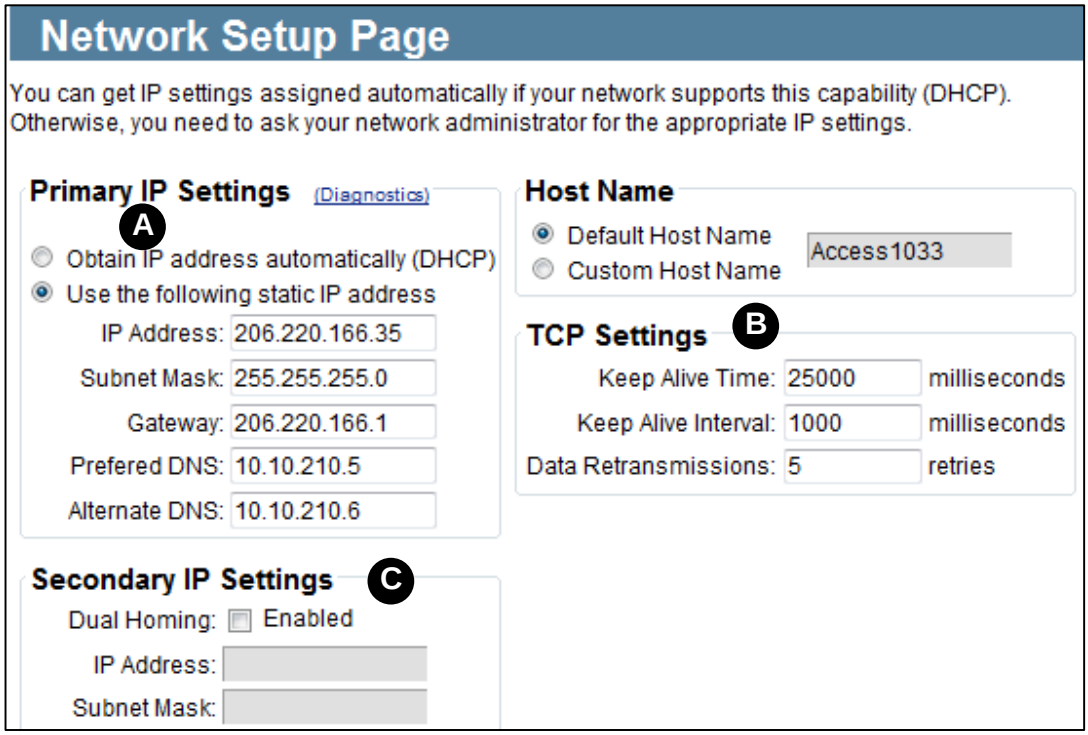
b. Output Setup

c. Tab 1 Pull Forward Outputs

d. Tab 2 Prompt/Output Mapping

e. Tab 3 Output Cloning

3.3.3. Network Setup



A Primary IP Settings

- **DHCP**: The system can be setup to use DHCP to get an IP address or configured to use a static IP address that is provided by the network administrator. Note that although DHCP works, there is no way to assign a network host name to the terminal. So if the IP address changes it may be difficult to find the terminal on the network.
- **IP Address**: When DHCP is enable, the IP address assigned to the terminal will be displayed. Otherwise enter the IP address that the terminal should use on the network.
- **Subnet Mask**: When DHCP is enabled, the subnet mask assigned to the terminal will be displayed. Otherwise enter the subnet mask that the terminal should use on the network.
- **Gateway**: When DHCP is enabled, the default gateway assigned to the terminal will be displayed. Otherwise enter the default gateway that the terminal should use on the network.

3.3.3. Network Setup, Continued

- **Preferred DNS**: When DHCP is enabled, the preferred DNS assigned to the terminal will be displayed. Otherwise enter the preferred DNS that the terminal should use on the network.
- **Secondary DNS**: When DHCP is enabled, the secondary DNS assigned to the terminal will be displayed. Otherwise enter the secondary DNS that the terminal should use on the network.

B **TCP Settings**

- **Keep Alive Time**: The parameter controls how frequently TCP tries to verify that an idle connection is still intact by sending a keep alive packet. If the remote computer is still reachable and functioning, the remote computer acknowledges the keep alive transmission. By default, keep alive packets are not sent. A program can turn on this feature on a connection.
- **Keep Alive Interval**: This parameter determines the interval that separates keep alive retransmissions until a response is received. After a response is received, Keep Alive Time again controls the delay until the next keep alive transmission. The connection is aborted after the number of retransmissions that are specified by Data Retransmissions are unanswered.
- **Data Retransmissions**: This parameter controls the number of times that TCP retransmits an individual data segment (non-connect segment) before it aborts the connection. The retransmission timeout is doubled with each successive retransmission on a connection. It is reset when responses resume. The base timeout value is dynamically determined by the measured round-trip time on the connection.

C **Secondary IP Settings**

- **Enable Dual Homing**: Dual homing allows the terminal to have two IP addresses assigned to it. This is useful if the terminal needs to communicate with devices on separate networks (subnets). This is required to be enabled and configured if using the I/O node accessory. See sect. 5.2.3 for setup instructions.
- **IP Address**: Secondary IP address that the terminal should use on the network.
- **Subnet Mask**: Secondary subnet mask that the terminal should use on the network.

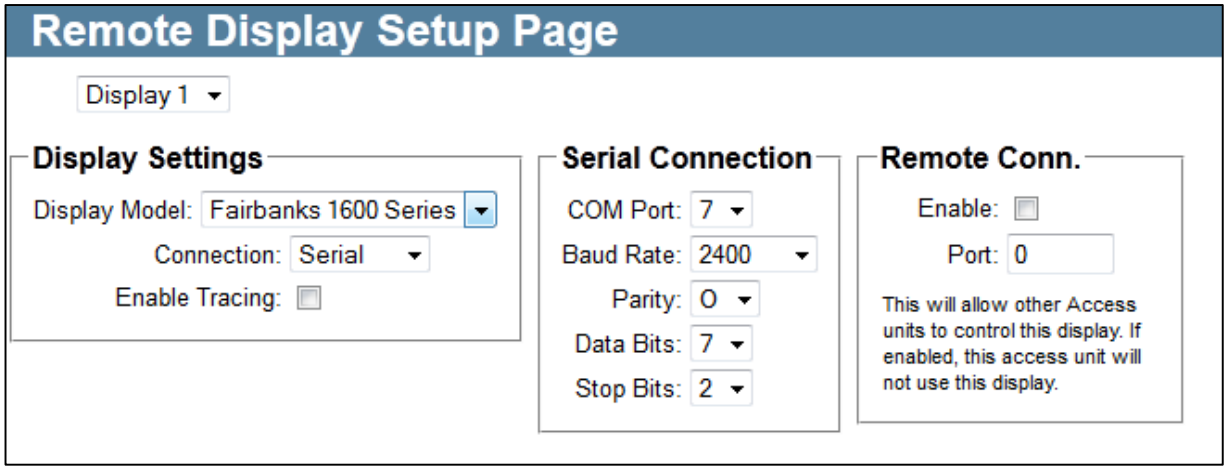
3.3.4. Remote Display Setup

Remote displays communicate weight data from the Unattended Terminal to a external display. The two display.s currently supported include the Rice Lake LaserLight and the Fairbanks 160x series.

Fairbanks 1605/1605T

Below are the features included with the Fairbanks 1600 series. Default factory settings include Serial settings: 2400 / O / 7 /2

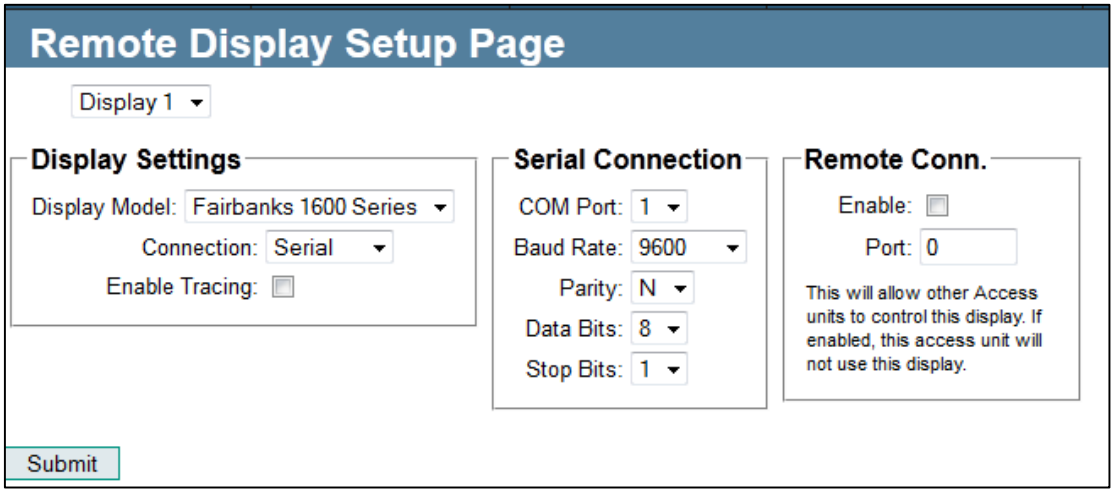
- Choose the “Display” number on the dropdown that relates to the unit.
- Select “Display Model” as Fairbanks 1600 Series.
- Choose Connection as Serial, then setup serial connections 2400/O/7/2 from factory defaults, or other settings dependent upon display setup.



3.3.4. Remote Display Setup, Continued

To use the additional sign option on the 1605T- (Shown again under Sign Setup)

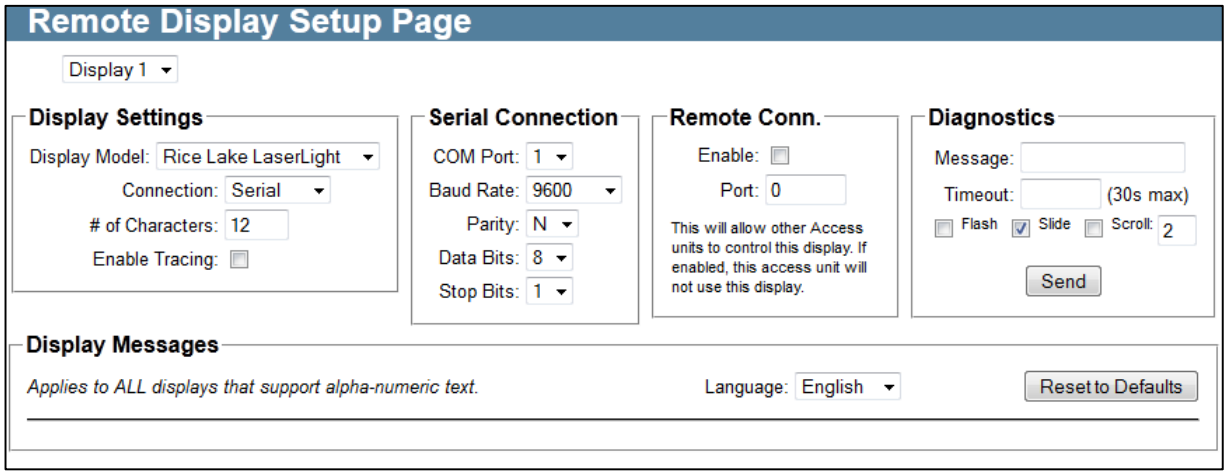
- Choose the “Sign” number on the dropdown that relates to the unit.
- Select “Sign Type” as Fairbanks Display 1605T.
- Select “Display” to match the same value used from the Display Setup.



3.3.4. Remote Display Setup, Continued

Rice Lake LaserLight

Below are the features included with the Rice Lake setup, serial connection settings vary on dependency of the display.

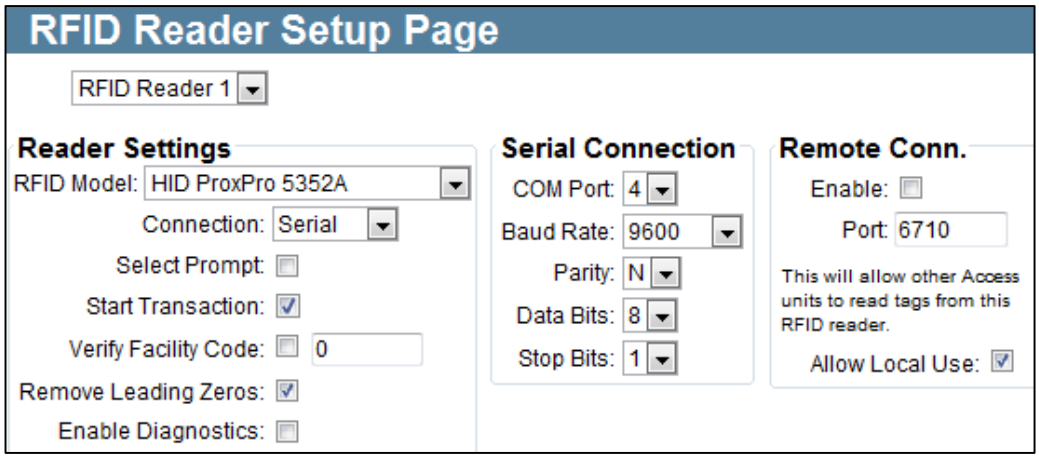


3.3.5. Rfid Reader Setup

Common to the options of the RFID Reader include the below, other items are specific to the RFID Model selected.

- RFID Model: Select the type of RFID reader to configure. Certain readers will have different configurations and that will be noted below.
- Start Transaction
- Remove Leading 0: Many RFID cards will send the card number along with leading zeros. Typically, these zeros should not be part of the card number and need to be removed. By default enable this option.
- Enable Diagnostics: When enabled additional diagnostic data about the RFID reader will be available
- Serial Connection Setup
- Enable Port for Remote Connection

RFID Model: HID and AWID Proximity Readers



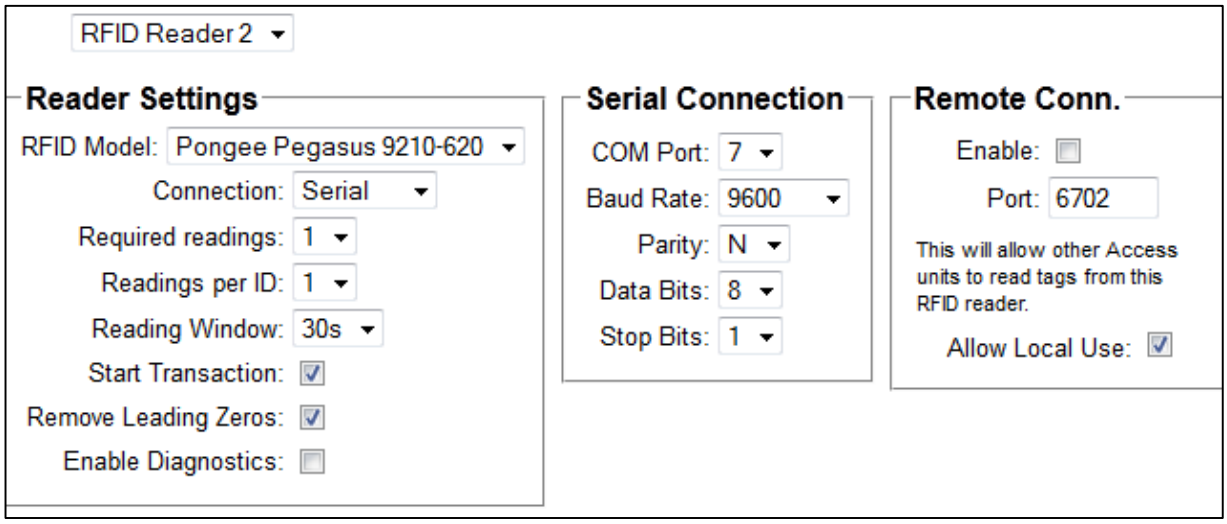
Select Prompt: Enable this option if this reader is going to be used to select items from a prompt. The RFID card numbers must match the item codes that are sent from MatreX.

Start Transaction: Enable this option if this reader is used to start a transaction by identifying a vehicle.

Verify Facility Code: Enable this option and enter a facility code to verify. HID and AWID proximity cards contain a facility code as well as a card number. To only allow certain cards to be used, you can require a specific facility code.

3.3.5. Rfid Reader Setup, Continued

RFID Model: Pongee Pegasus Readers



Pongee Pegasus Readers: The Pegasus reader sends card numbers continuously and there are often a number of erroneous readings. The following settings will allow the terminal to filter out the actual card number that is being detected

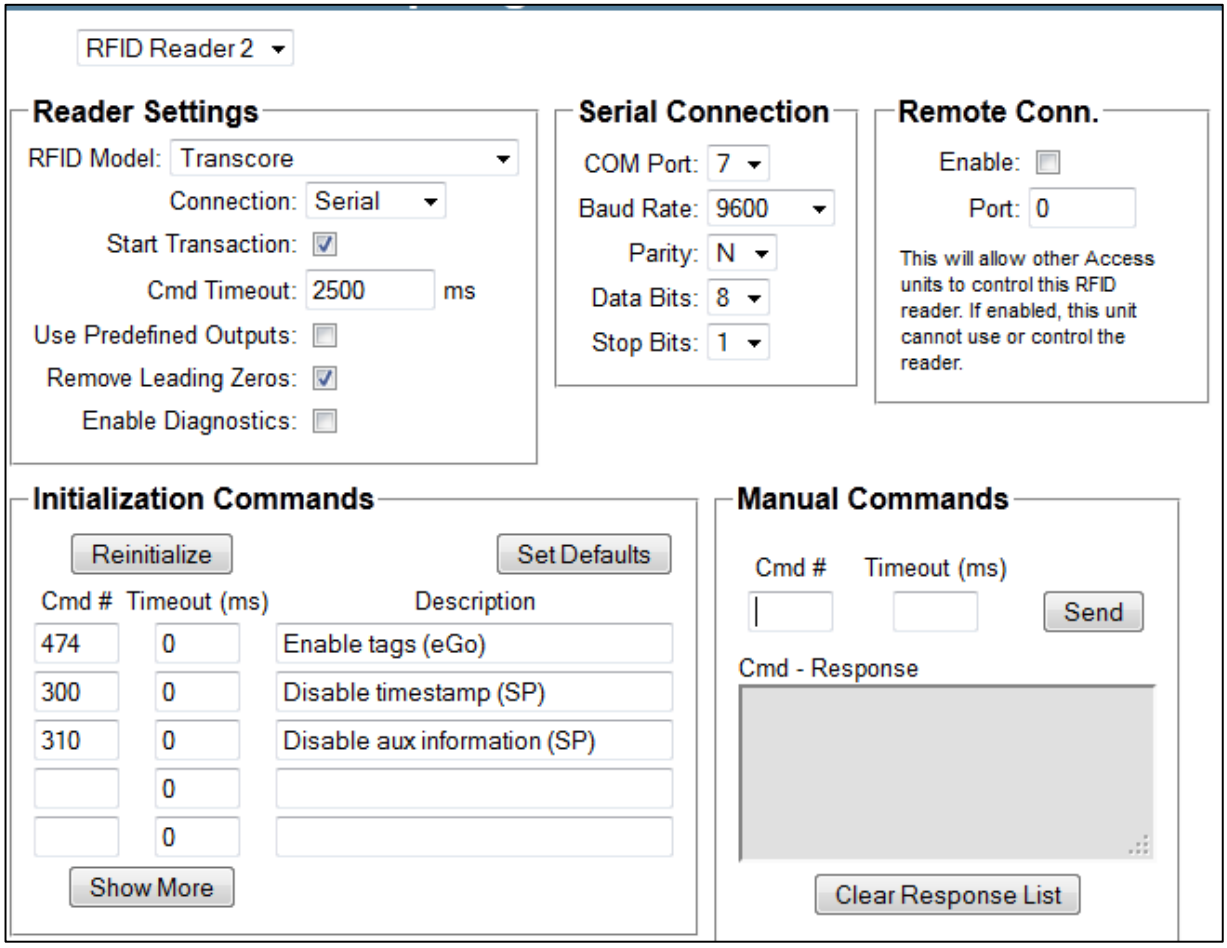
Required Readings: Make the reader send a number of readings before looking for a card number. This should be in the range of 6-9.

Readings Per ID: Set the number of readings of an ID that must be with in the required number of readings before that ID would be considered valid. For example, if the previous setting is 6 and this setting is 3, then there will be a total of 6 readings. For an ID to be considered value, there must be 3 readings of that ID out of the 6 readings available.

Reading Window: Since the readings are continuously coming in a reading window is required. This prevent a duplicate erroneous reading from being considered a card when the readings come in every so often. The default value is 30 seconds.

3.3.5. Rfid Reader Setup, Continued

TransCore Readers



Command Timeout: Enter a command timeout in milliseconds. Default is 2500 ms.

Use Predefined Outputs: There are two options for using the outputs on the Transcore reader.

1.) Use the predefined behavior of the outputs (turning this option on). In this case the reader will control the outputs and the Access terminal will only be able to monitor the outputs.

2.) Direct control of the outputs by the terminal (turning this option off). In this case the Access terminal will be able to control the outputs. This does require configuring a remote IO source on the Input/Output Setup page. Just select TransCore IO and select the reader slot the the TransCore reader is configured in.

3.3.5. Rfid Reader Setup, Continued

Initialization Commands: To allow customization of the Transcore reader, various commands can be sent to the reader to initialize it. The terminal will put the reader at factory defaults. Then additional commands can be sent to modify its behavior as necessary. Default commands are: 474 to read tags on the 2110 reader and 300, 310 to disable axillary information from the 1620 reader.

Reinitialize: Use this button to reinitialize the reader after making changes.

Show More/Less: Use this button to show more or show less initialization commands.

Manual Commands: Use this area to send a command directly to the reader. Enter the command number and a timeout value. If no timeout value is entered, the default will be used. Refer to the Transcore reader's manual for details on commands to send.

Command Response: This are will display the response from the reader for that command.

Serial Connection

Serial COM Port: Select the serial port that the device is connected to.

Baud Rate: Select the baud rate for the serial communications with the device.

Parity: Select the parity setting for the serial communications: N - none, O - odd, E - even, S - space, M - mark.

Data Bits: Number of data bits in the serial communications.

Stop Bits: Number of stop bits in the serial communications.

3.3.5. Rfid Reader Setup, Continued

Network Connection

Host: Enter the host name or the IP address of the device or the serial to Ethernet converter that is connected serial to the device.

Port: Specify the TCP port number that the data is being sent from the host. See documentation or configuration of the host for this information.

Configure Device: Click on this link to open the host in a web browser.

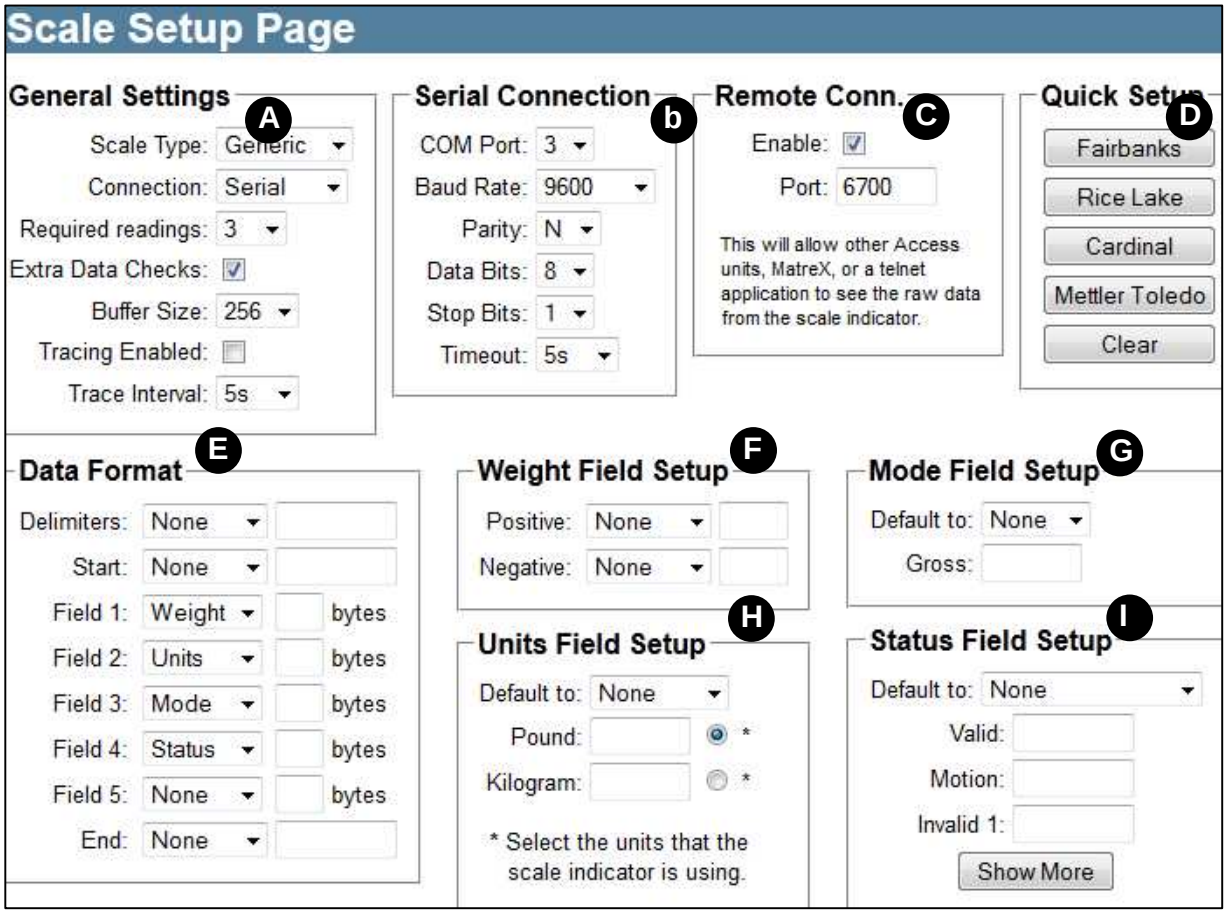
Remote Connection

Enable: If this terminal is not directly using the device but instead just acting as a serial to Ethernet converter, then enable this option. In this case the other terminal would use the IP address of this terminal as the host name and the port number specified.

Port: Specify the TCP port on the terminal to provide device data on.

Allow Local Use: Enabling this will allow this terminal and another terminal to both control the device. Normally if a remote connection is being use this terminal does not use the RFID reader. This is only available for certain RFID readers.

3.3.6. Scale Indicator Setup



A General Settings

- ***Scale Type:*** For all connections to a scale, use the Generic type.

b ***Connection:*** Select serial for direct connection from FBAS terminal to scale indicator, Select Network for connecting to another unit or a device extending scale data via TCP/IP communication. *Note the top central area changes options from Serial Connection to Network Connection, the above shows the more common Serial Connection.

- ***Serial Connection***
  - COM PORT: Select the serial port that the device is connected to. Available for scale RS232 serial data includes COM 4,3,2.
  - BAUD Rate: Select baud for the serial communication to device
  - Parity: N - none, O - odd, E - even, S - space, M - mark
  - Data Bits: Number of data bits in the serial communications.

3.3.6. Scale Indicator Setup, Continued

- Stop Bits: Number of stop bits in the serial communications.
- Time Out:

o ***Network Connection***

- ***Host:*** Enter the host name or the IP address of the device or the serial to Ethernet converter that is connected serial to the device.
- ***Port:*** Specify the TCP port number that the data is being sent from the host.
- ***Timeout:***
- ***Protocol:*** UDP or TCP/IP

- ***Required Readings***: Specify the number of consecutive and identical readings that must be read before the reading will be used. This setting can be used to compensate for a scale indicator that does not provide motion status. In that case a high value such as 6 or 9 should be used. The default value is 3.
- ***Buffer Size***: Option allows lower buffer readings when capturing a trace session for troubleshooting.
- ***Tracing Enabled***: This value should be unchecked unless needed temporarily for diagnostic purposes.
- ***Trace Interval:*** Set the interval at which the diagnostic scale data is reported. A setting of zero maybe useful for showing every reading, but will cause very high CPU loading. Verify after tracing is complete to disable the above tracing.

C ***Remote Connection*:**

- ***Enable:*** If this terminal is not directly using the device but instead just acting as a serial to Ethernet converter, then enable this option. In this case the other terminal would use the IP address of this terminal as the host name and the port number specified.
- ***Port***: Specify the TCP port on the terminal to provide device data on.

D ***Quick Setup:***

- A number of default scale data formats are supported. Just click on the button to setup the data and field formats, use as a guide and not a solution to scale indicator setup readings.

3.3.6. Scale Indicator Setup, Continued

E *Data Format:*

- ***Delimiters:*** If there is a common delimiter between each field within the reading. This is typically one character and often a space character.
- ***Start:*** Specify a start character(s) that indicates the beginning of the reading. Not all data formats have a start character, but when there is it is often the ASCII start to text (STX) character (hexadecimal value of 0x02). You can select common characters from a list or enter a custom value. To enter a hexadecimal value prefix it with '0x'.
- ***Field:*** Up to 5 data fields can be configured within the reading. There are four fields that were looking for the Weight, Units (of measure), the Mode, and finally the Status. Often the unit of measure and mode are combined with the status field. If there is an area of the reading that must be skipped use the Mask field and specify the number of bytes (characters) to skip. For each field you can optionally specify the the number of bytes in each field. This is not necessary most of the time but can be useful. Each field that is specified has its own data mappings as well. At a minimum there must be a weight field. In general, if any of the four fields are available they should be configured here.
- ***End:*** Specify an end character(s) that indicates the end of the reading. All data formats will have an end character. The most common is the ASCII carriage return (CR) character (hexadecimal value of 0x0D). You can select common characters from a list or enter a custom value. To enter a hexadecimal value prefix it with '0x'

F *Weight Field Setup:*

- The weight data is parsed based on digits and possibly a decimal point. The only other information that is included (sometimes) in the weight field is an indicator for positive and negative values.
- ***Positive Indicator:*** You can select common characters from a list or enter a custom value. To enter a hexadecimal value prefix it with '0x'. The default positive indicator for most data formats (if any) is a space.
- ***Negative Indicator:*** You can select common characters from a list or enter a custom value. To enter a hexadecimal value prefix it with '0x'. The default negative indicator for most data formats (if any) is a minus sign (dash)***.***

3.3.6. Scale Indicator Setup, Continued

G ***Mode Field Setup:*** The mode fields will indicate the mode that the scale indicator is in. The only allowed mode of the scale indicator is: Gross.

- ***Default***: If there is a mode field in the data format, then the mode should not default to anything (None). It should read the mode from the reading instead. Some data formats will combine the mode information into the status field. In that case, this setting can be set to the expected mode (Gross).
- ***Gross***: specify the character(s) used to determine if gross is the mode. Status Field Setup This field will indicate the status of the scale data. If this field is available the The valid status must be mapped. Any additional mappings will be useful as well, especially the motion status.

H ***Units Field Setup:*** The units field will indicate the units of measure that the scale is reporting the weight in. This section allows you to specify which characters in the reading map to pounds or kilograms.

- ***Default:*** If there is a unit of measure field in the data format, then the units field should not default to anything (None). It should read the units from the reading instead. Some data formats will combine the unit of measure information into the status field. In that case, this setting can be set to the expected unit of measure. You will still need to select pounds or kilograms via the radio buttons as the expected units of measure.
- ***Pounds:*** Specify the character(s) used to determine if pounds is the unit of measure. Also use the radio button to indicate that pounds is the expected unit of measure. In order to be NTEP compliant the unit of measure must be pounds.
- ***Kilograms:*** Specify the character(s) used to determine if kilograms is the unit of measure. Also use the radio button to indicate that kilograms is the expected unit of measure.

I ***Status Field Setup:*** This field will indicate the status of the scale data. If this field is available the The valid status must be mapped. Any additional mappings will be useful as well, especially the motion status.

- ***Default***: If there is a status field in the data format, then the status should not default to anything (None). It should read the status from the reading instead. There will be a few data formats that do not have a status field. In that case we have no choice but to default to Valid.
- ***Valid:*** Specify the character(s) used to determine if status is valid.

3.3.6. Scale Indicator Setup, Continued

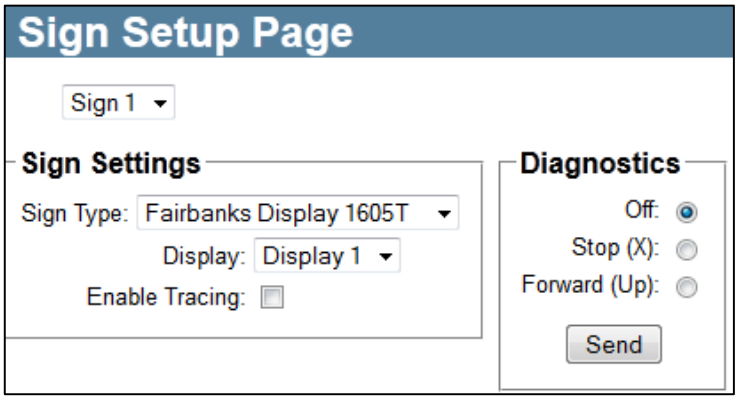
- ***Motion:*** Specify the character(s) used to determine if status is motion. A common character for a motion status is M or MO. In the data formats the do not have a unit or mode field, the motion is often '1(' or something similar to that.
- ***Center of Zero:*** This status indicates that the scale is at or near zero. This is also considered a valid status.
- ***Show More/Less***: Use this button to show more or show less status mapping options.

3.3.7. Sign Setup

1605T (Housed Traffic Sign of Fairbanks Remote Display Series 1605T)

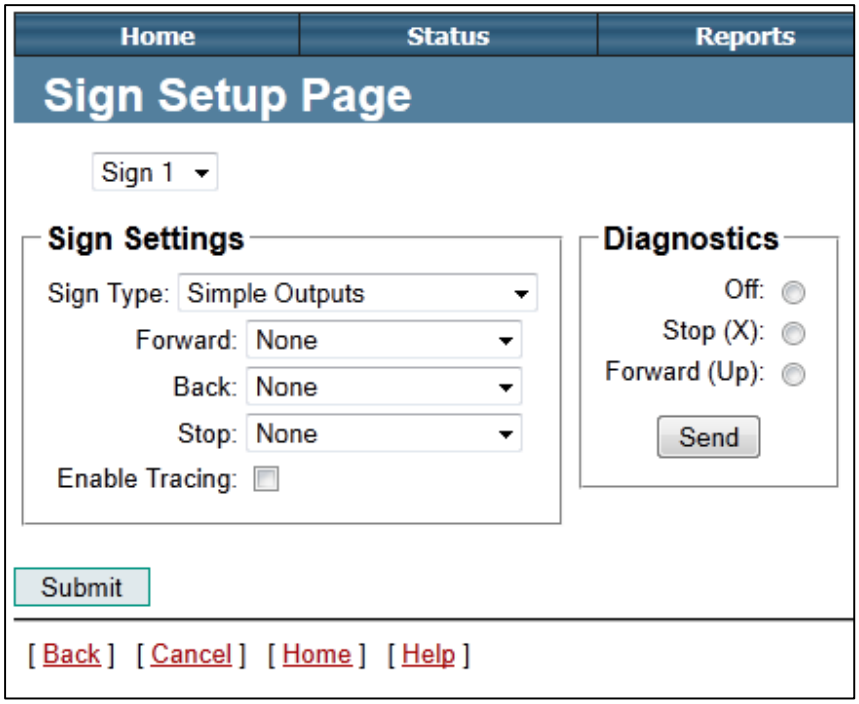
To use the additional sign option on the 1605T

- Choose the “Sign” number on the dropdown that relates to the unit.
- Select “Sign Type” as Fairbanks Display 1605T.
- Select “Display” to match the same value used from the Display Setup.



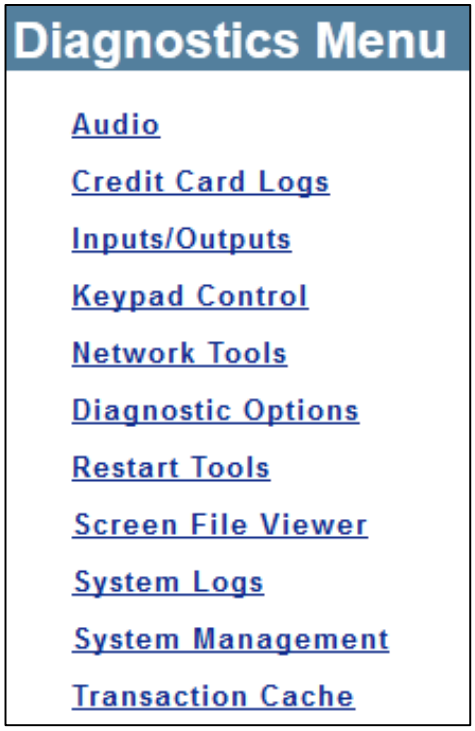
3.3.7. Sign Setup, Continued

Another option for expansion is using a Sign Type “Simple Outputs”. This will allow outputs from the i/o board to control the forward, backup and stop navigation signs if needed.



3.4. Diagnostics Menu

The Diagnostics Menu contains viewing, event controlling, and certain command tools to the Access Terminal.

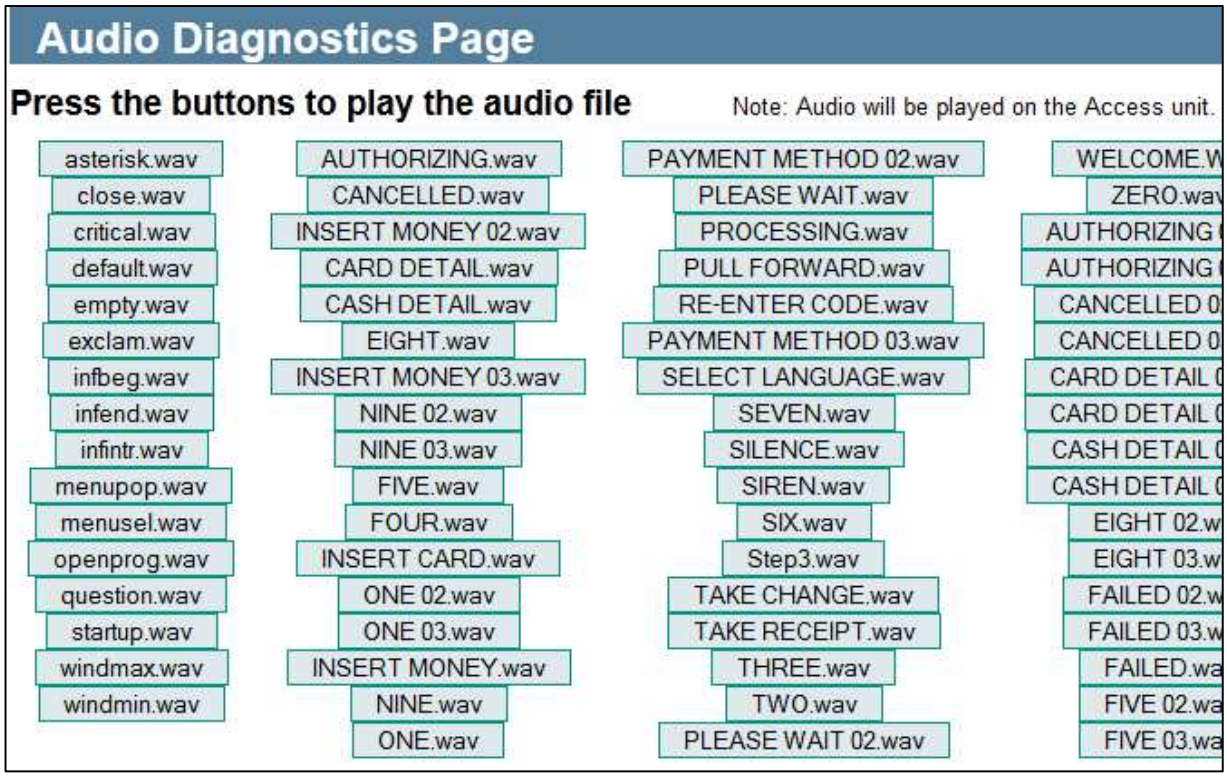


The following section contains the following pages:

- Audio
- Credit Card Logs
- Inputs/Outputs
- Keypad Control
- Network Tools
- Diagnostic Options
- Restart Tools
- Screen File Viewer
- System Logs
- System Management
- Transaction Cache

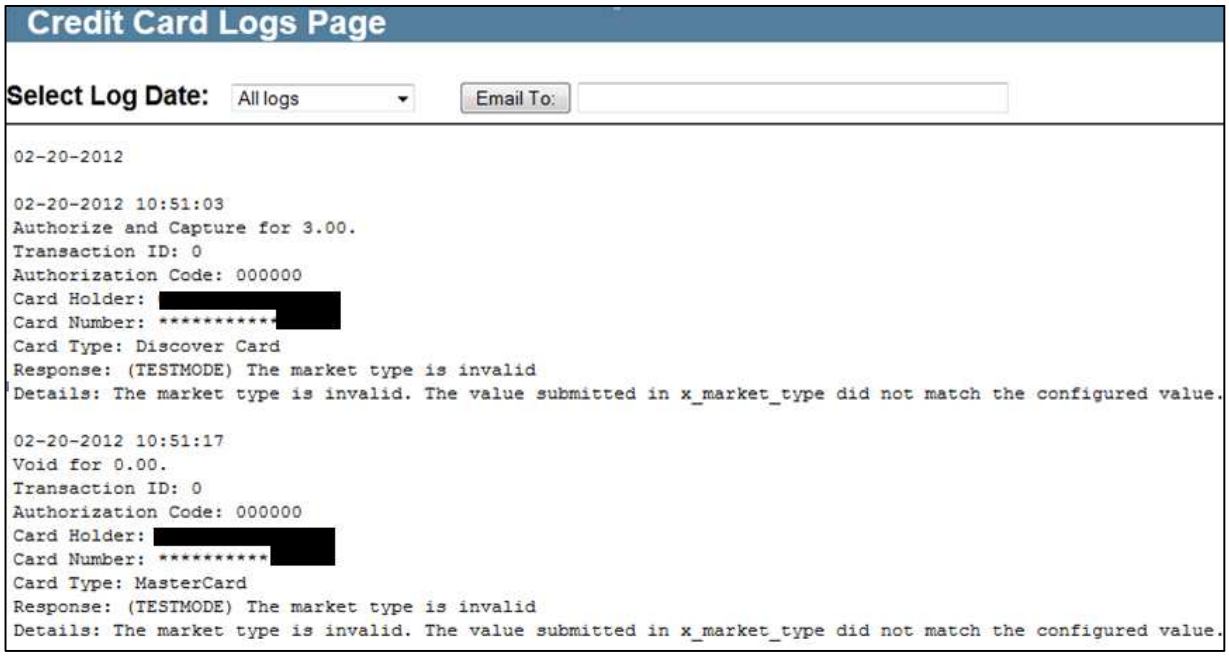
3.4.1. Audio Diagnostics

To test audio output on the Access Terminal select any one of the labeled buttons on the Audio Diagnostics page to play on terminal.



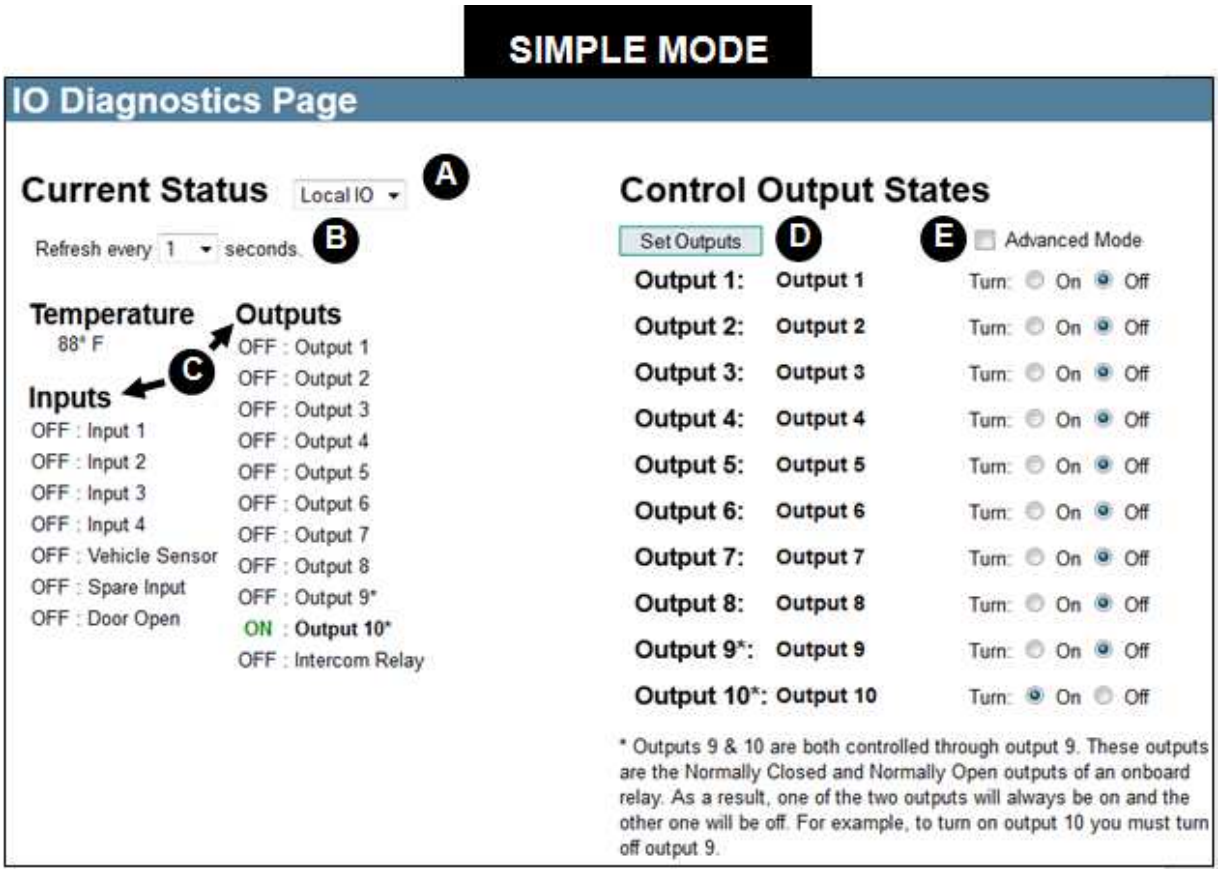
3.4.2. Credit Card Logs

This section displays credit card logs for the past 30 days. Every message to and response from the credit card process is logged.



3.4.3. I/O Diagnostics

Section monitors and controls the IO of the system and any remote IO sources to troubleshoot IO.



A Select the IO source to monitor. This also applies to controlling the output states.

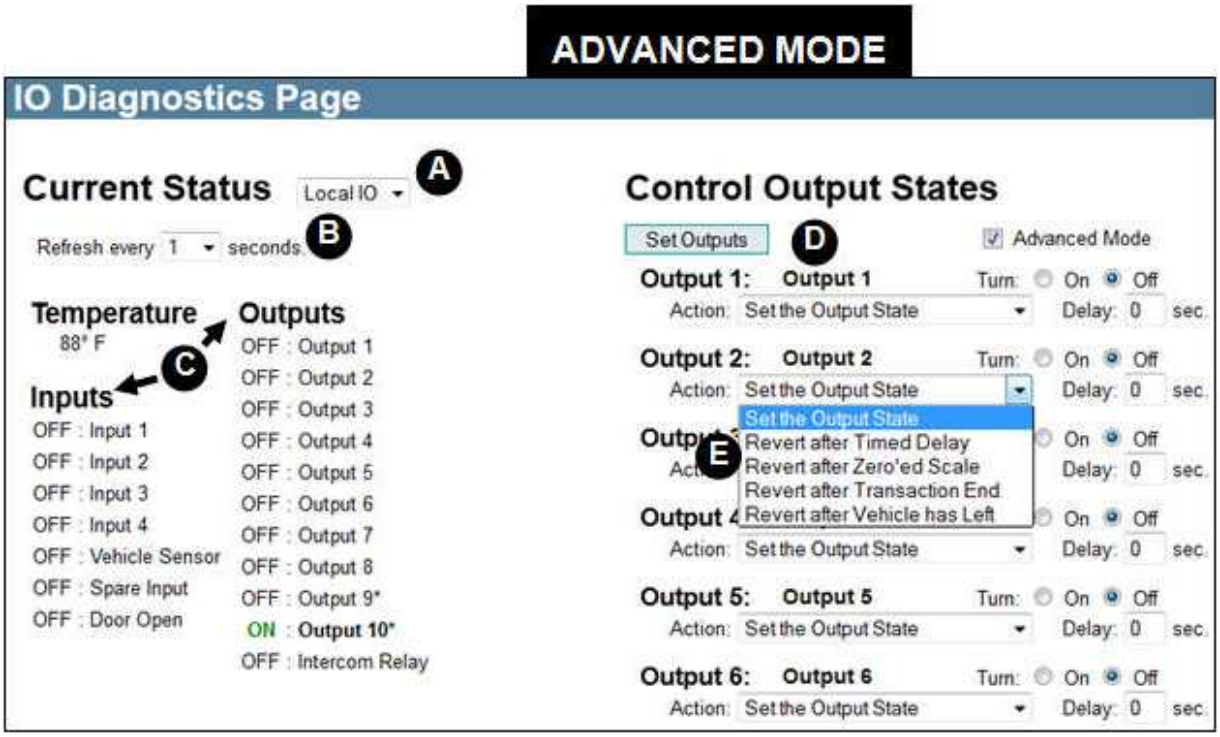
B Refresh Rate: Set the refresh rate for the current status

C Current Input/Output status: Shows Refreshed list of i/o current status:

D Set Outputs: Press this button to set the state of the outputs.

3.4.3. I/O Diagnostics, Continued

E Advanced Mode – Behavior: This determines how the output will behave. It has the following settings.



Advanced Mode Action options:

- None - If this is selected, the output is not changed at all.
- Simple Delay - If this is selected, the output will be turned on or off and then switched back after the number of seconds specified by the delay.
- Transaction End - If this is selected, the output will be turned on or off and then switched back after the transaction has ended. If there is a non- zero value in the delay, the switch back of the output will be delayed for that amount of time after the transaction has ended.
- Zeroed Scale - If this is selected, the output will be turned on or off and then switched back after the scale has gone to zero. If there is a non- zero value in the delay, the switch back of the output will be delayed for that amount of time after the scale has gone to zero.
- Vehicle has Left - If this is selected, the output will be turned on or off and then switched back after the vehicle has left. If there is a non- zero value in the delay, the switch back of the output will be delayed for that amount of time after the vehicle has left.

3.4.3. I/O Diagnostics, Continued

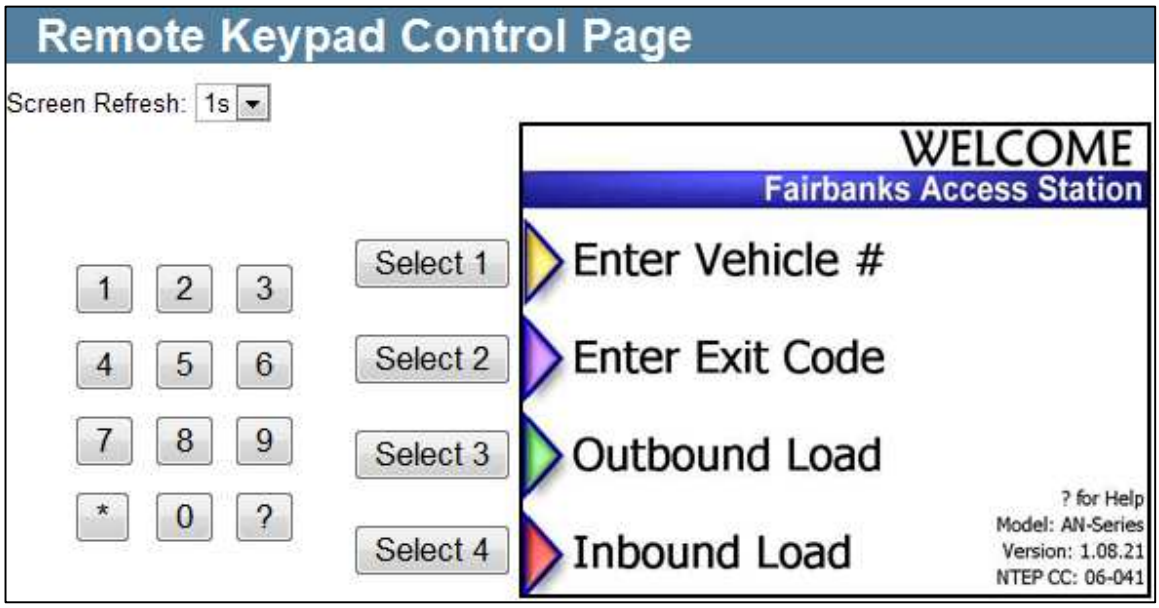
Set the Output - If this is selected, the output will be turned on or off and will not be switched back. The delay setting is ignored.

- Advanced Mode – Delay: Number of seconds to delay the switching back of the output state.

3.4.4. Keypad Control

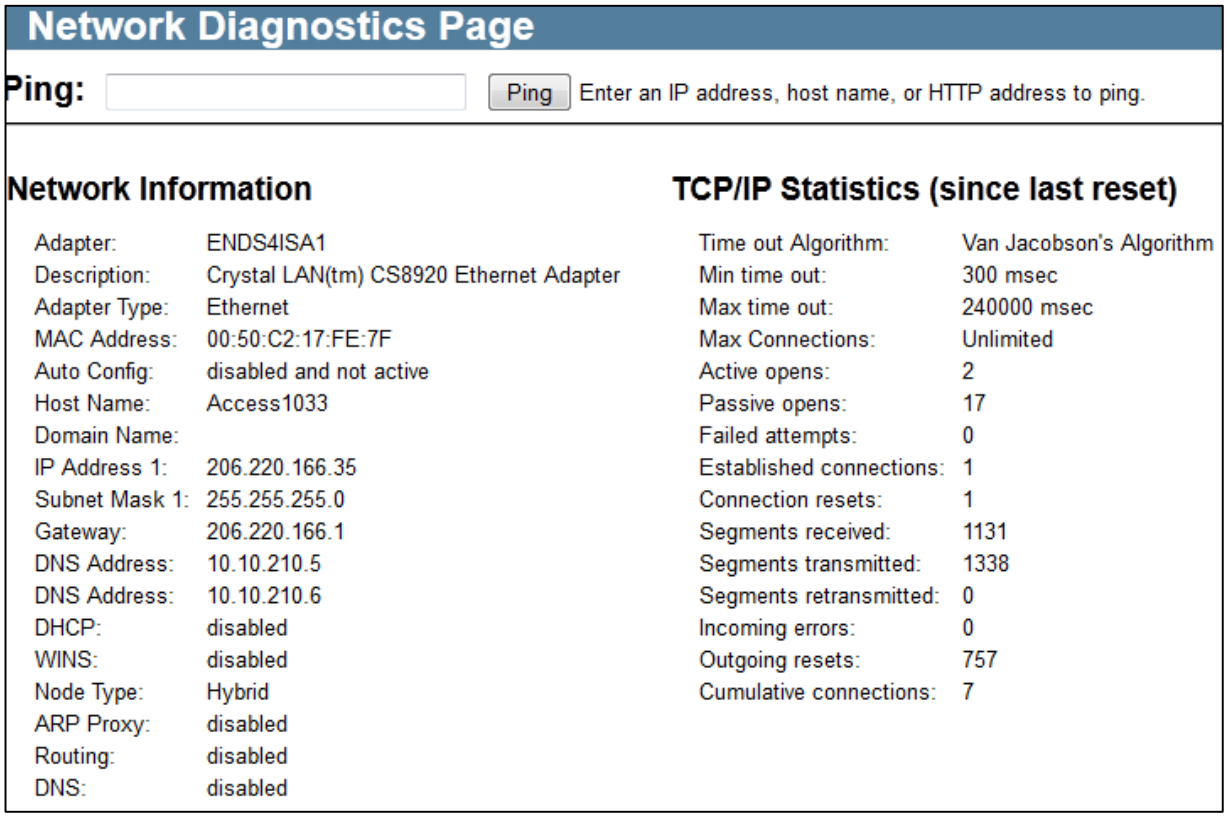
Keypad Buttons: The buttons on the page are laid out in the same fashion as the keypad. Just click on one of them to cause the key on the terminal to be pressed. This feature can be turned on/off on a per user basis. See User Setup.

Screen: The screen will refresh about every second. Occasionally only a partial image or no image is retrieved at all. This is expected, it prevents issues at the terminal.



3.4.5. Network Diagnostics

Network Diagnostics contains network information including IP addresses and MAC ids and ability to ping an IP address (useful to determine proper system connections to network/ location of network failure).



Network Diagnostics Page

Ping: [ ] Ping Enter an IP address, host name, or HTTP address to ping.

Network Information

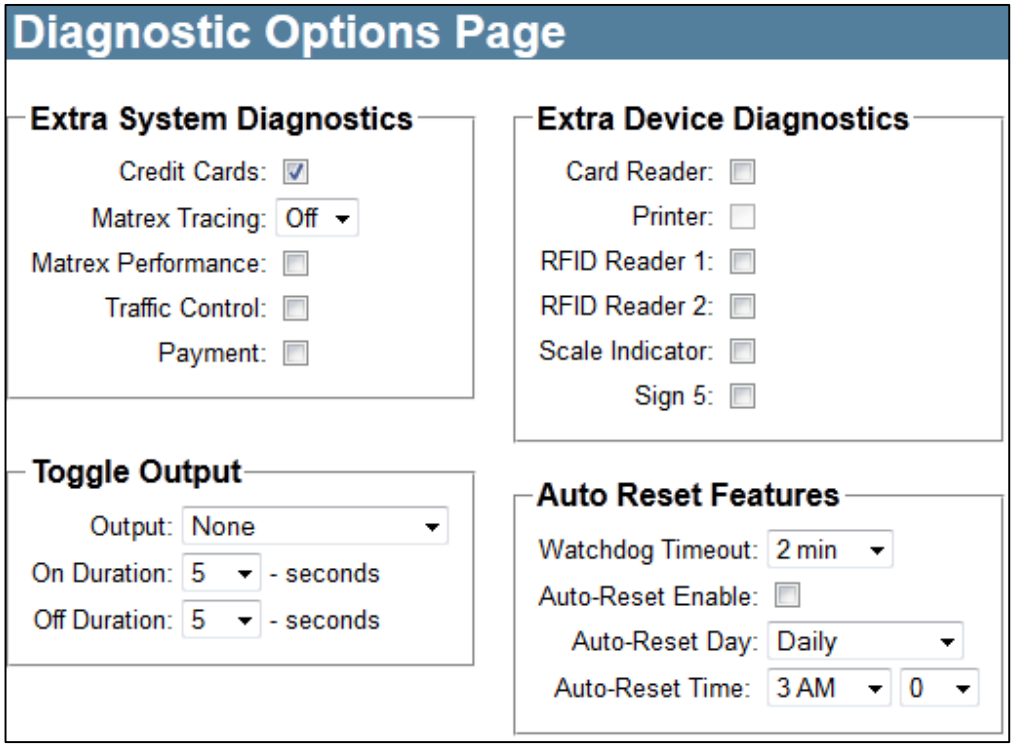
Adapter:	ENDS4ISA1
Description:	Crystal LAN(tm) CS8920 Ethernet Adapter
Adapter Type:	Ethernet
MAC Address:	00:50:C2:17:FE:7F
Auto Config:	disabled and not active
Host Name:	Access1033
Domain Name:	
IP Address 1:	206.220.166.35
Subnet Mask 1:	255.255.255.0
Gateway:	206.220.166.1
DNS Address:	10.10.210.5
DNS Address:	10.10.210.6
DHCP:	disabled
WINS:	disabled
Node Type:	Hybrid
ARP Proxy:	disabled
Routing:	disabled
DNS:	disabled

TCP/IP Statistics (since last reset)

Time out Algorithm:	Van Jacobson's Algorithm
Min time out:	300 msec
Max time out:	240000 msec
Max Connections:	Unlimited
Active opens:	2
Passive opens:	17
Failed attempts:	0
Established connections:	1
Connection resets:	1
Segments received:	1131
Segments transmitted:	1338
Segments retransmitted:	0
Incoming errors:	0
Outgoing resets:	757
Cumulative connections:	7

3.4.6. Diagnostics Options

This screen contains a quick toggle to the existing diagnostics locations to verify if a diagnostic option is enabled. **Note** diagnostic modes can slow processes to an unmanageable level which is reserved for extensive site monitoring and initial fine tuning when setting up the site.



Extra System Diagnostics: Enable or disable diagnostics for specific system features

Extra Device Diagnostics: Enable or disable diagnostics for specific devices.

Watchdog Timeout: Set the watchdog timeout. If an action on the main thread of the application takes longer than this timeout the system will automatically restart.

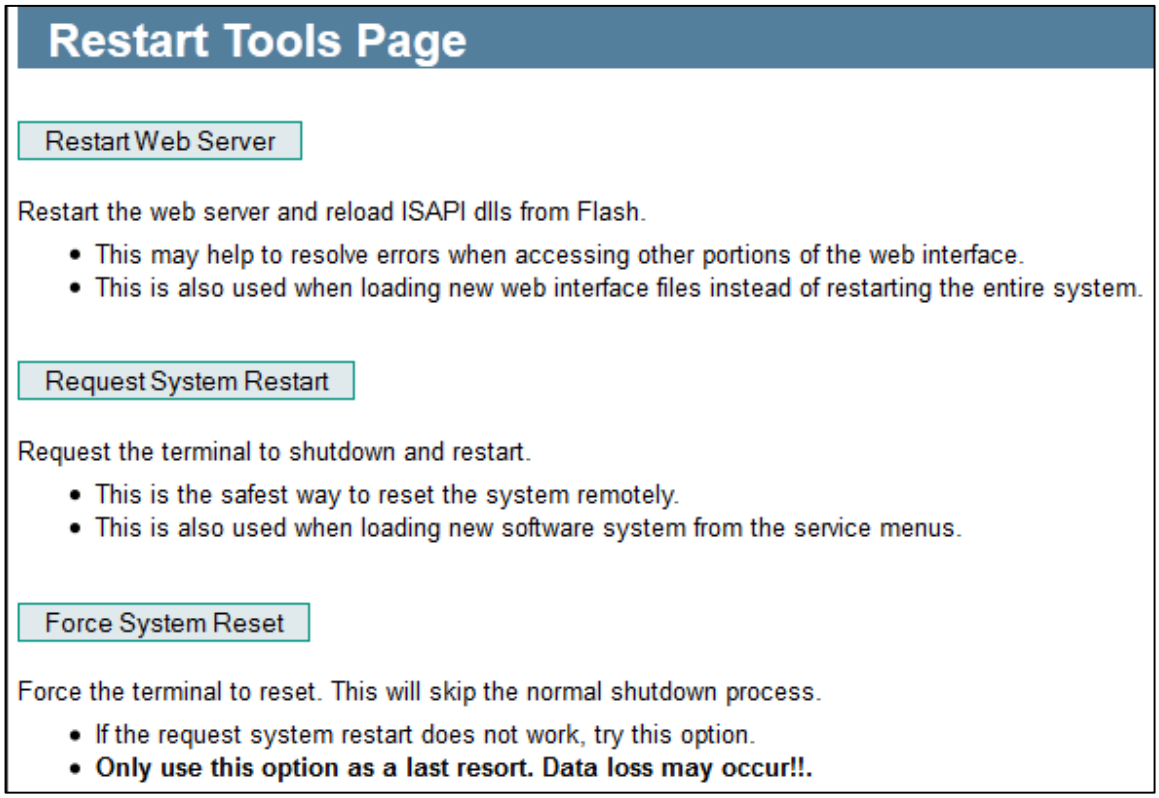
Auto-Reset: Enable the auto reset feature. This can be useful if the system is locking up or behaviors strangely after it has been running for a while. Often a reset will clear the issue, but it needs to be done periodically. This feature will do that automatically.

Auto-Reset Day: Set the day of the week to rest the terminal or select a daily reset. Usually once a week is often enough.

Auto-Reset Time: Set the time of the day to rest the terminal.

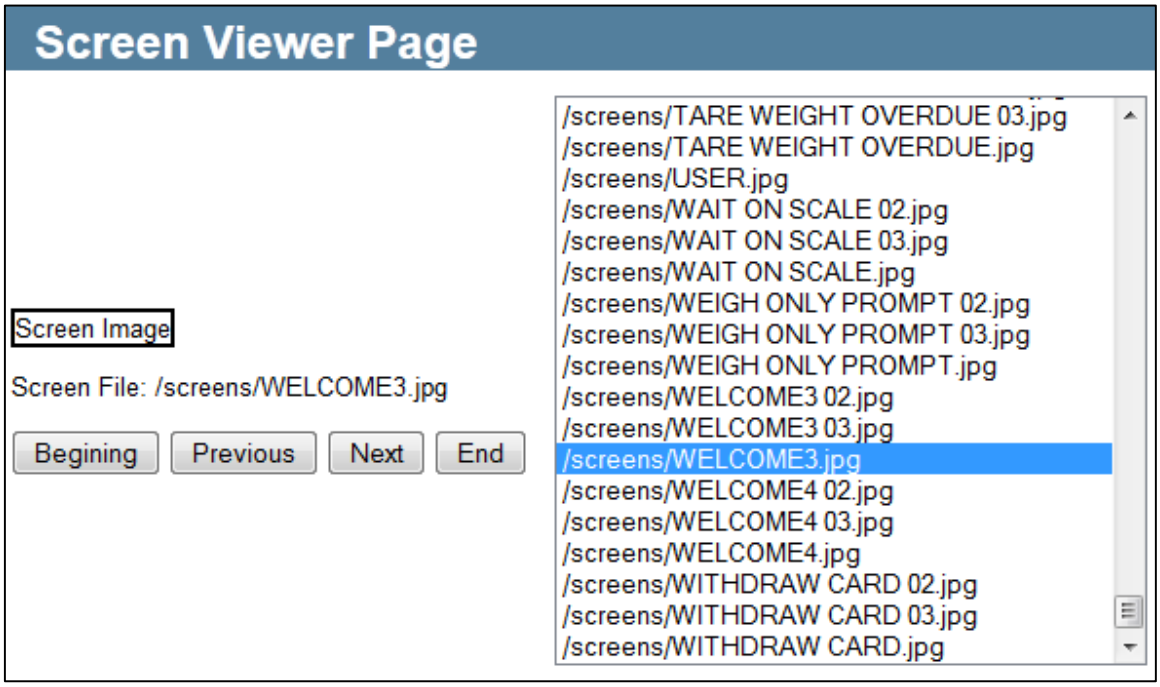
3.4.7. Restart Page

This page contains access to restart the web server the FBAS unit runs off of, request reset of the server or to force reset when necessary.

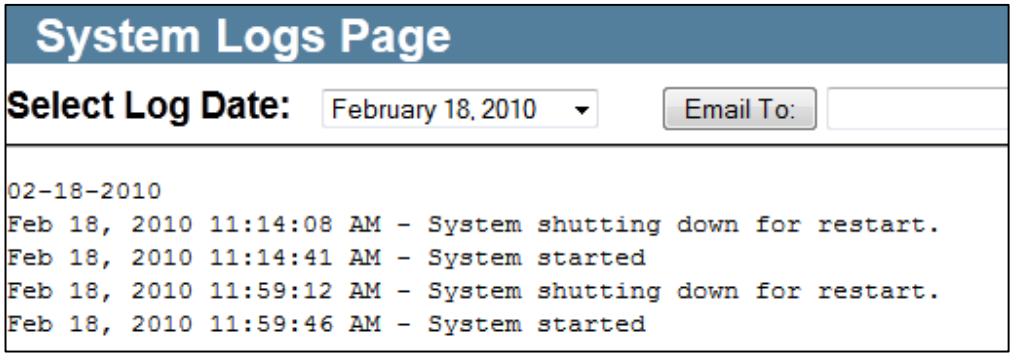


3.4.8. Screen File Viewer

This page allows a slide show of all the picture files contained and loaded on the Access Terminal software on the unit.



3.4.9. System Logs



Date Selection: Select the date of the log file to view.

Email To: Email the log file as the body of an email to someone.

Common Log Entries

- System started - This is written to the log when the system starts up.
- System shutting down for restart. - System is shutting down due to a reset.
- System shutting down. - System is simply shutting down.
- Initiating auto reset - This is written to the log when the system resets itself due to the enabling of the auto reset feature.

Error Log Entries

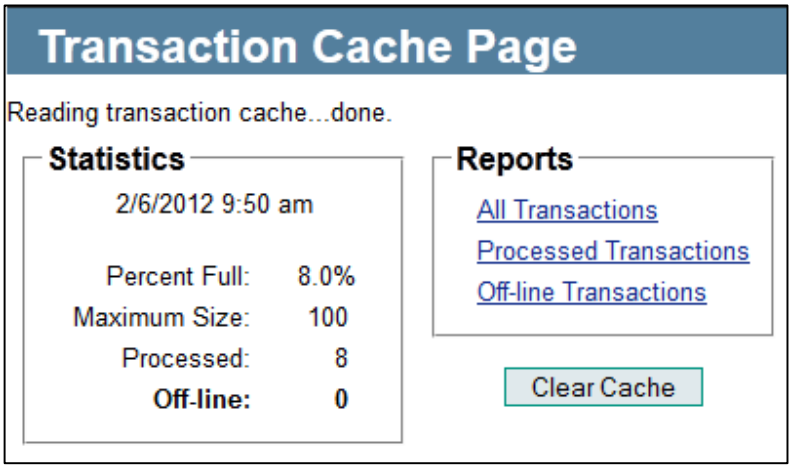
- The following is a list of error log entries and a brief description of each:
- Critically Low Memory (X.X MB), Initiating reset. - System memory (RAM) is low and the system is going to restart. Typically after restarting, more memory will be available.
- Watchdog timer (YY s) exceeded timeout (XX s) - Signifies that the system did not check in with the watch dog with in the specified amount of time.
- Network error occurred during query account. - This is written to the log when there is a general network error when trying to authorize a transaction.

3.4.10. System Management

System Management is reserved for advanced features, including remote viewing the Access Terminal, FTP and telnet options.

3.4.11. Transaction Cache

Transaction cache page clears cache on unit, and gives details to current capacity ratings.



Statistics: Displays various statistics about the transaction cache. The size of the cache is controlled on the MatreX Setup page.

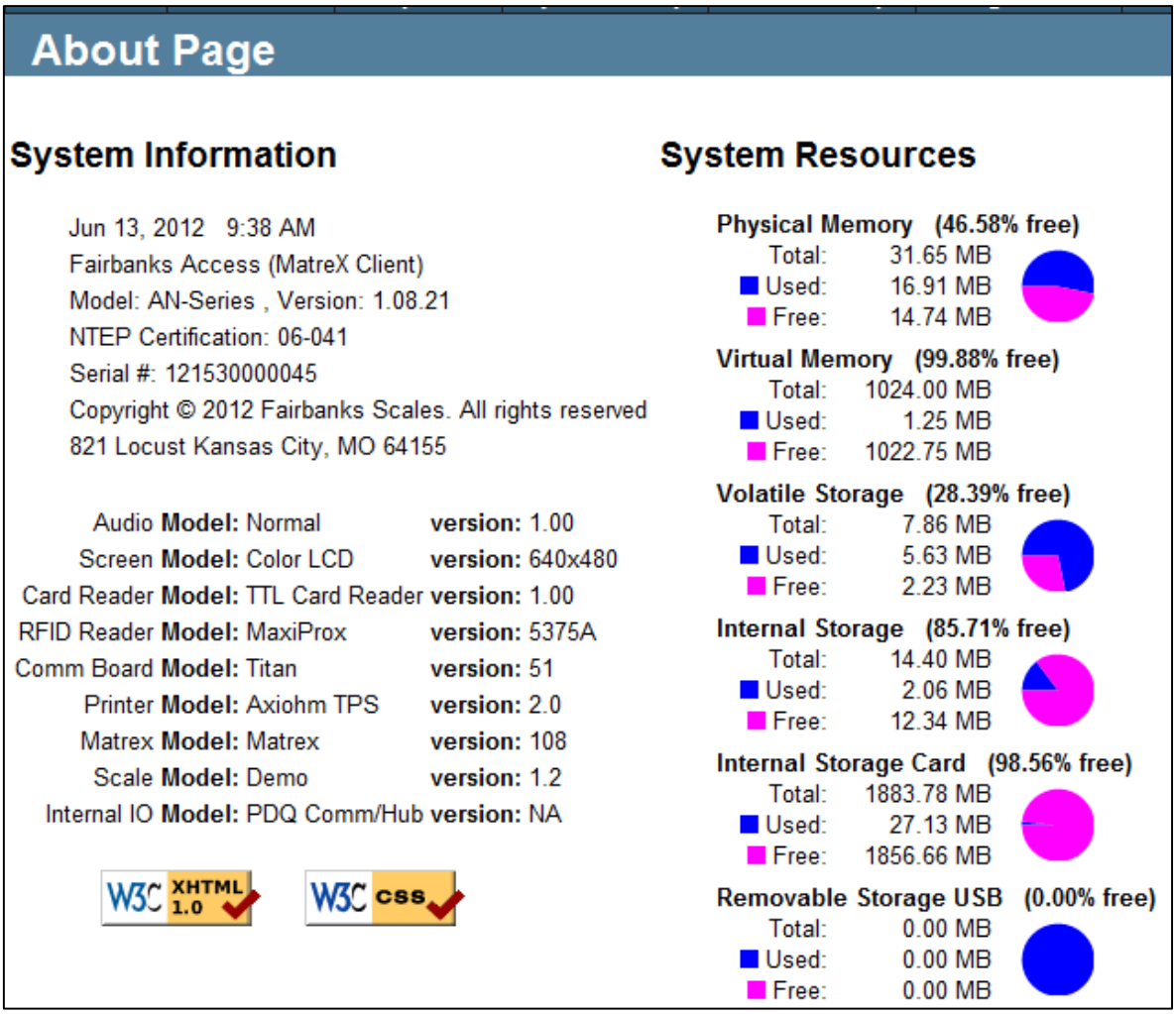
Reports: View lists of transactions in the cache based on certain criteria

Clear Cache: Clear all transactions from the cache.

Edit Transactions: Offline transactions can be edited. Only certain aspects of the transaction can be edited. Enough to correct any issues so that the transaction can be resent to MatreX. For complete editing of the transaction use MatreX once the transaction is resent.

3.4.12. About Page

About contains system information including: installed version, enabled features, and model/ software versions for various devices



NOT RELEASED

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
1	NEW DRAWING	X	X
2	UPDATED	5-24-12	RGB

04170013
TRANSFORMER
120VAC,24VAC,500VA,ACCESS

PHASE
NEUTRAL
GND
INCOMING
120 V

BLK 1
BLK 2
GRN

11270016
HEATER ACCESS, FAN
OPEN-COIL ASSY

BLK
WHT
GRN

BLK

04580007
PCB ASSY
POWER-SUPPLY,ACCESS

BLK–24V PHASE
GRN–GND
WHT–24V NEUT

WHT
BLK

GND
+24V

31947
FBAS BACK PANEL ASSY

123 J1
TB1
12345678910 1234 1234
TB2 TB3 TB4
C
B
A
1 4 7 10

32432
I/O-NODE PCB ASSY ACCESSORY

RED 12V+
BLK 12V–

04170017
BATTERY,12V,2.2Ah

04550004
SPEAKER

04540025
PRINTER,THERMAL

04540069
KEYPAD-MODULE

31972
DISPLAY

31912
PCB ASSY
DISPLAY
INVERTER

31982
PCB ASSY
FBAS TITAN
520 MHZ

31984
SD CARD, MEMORY
WITH
LICENSE, WINDOWS
CE CORE

04220003
FAN

04410016
FILTER, SURGE
ETHERNET
RJ45

31981
SWITCH
OPEN
CLOSED
COMMON
BLK
RED

04580040
PCB ASSY
COMM-HUB
VIPER-CTRL
GEN-2

31958
CARD
READER

CABLES
A–04080310
B–04080080
C–04080060
D–31980
E–04080082
F–04080322
G–04080321
H–04080062
J–04080064
K–04200025
L–04200028
M–04200027
N–04080170
Z–SUPPLIED W/UNIT

31986	FBAS TERMINAL
NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES (METRIC)
TOLERANCES: FRACTIONS ▲
ANGLES ▲
3 PLACE DECIMALS ▲
2 PLACE DECIMALS ▲.03

MATERIAL
–

FINISH
–

		DATE
DR.	RGB	3-22-11
CH.	RGB	3-22-11
APP.	RGB	3-22-11

Fairbanks Scales
St. Johnsbury, Vermont

FBAS WIRING DIAGRAM

SIZE B
DRAWING NO. AND PART NO. 31948
SCALE 1/1
SHEET 1

AN Series

Fairbanks Access Solutions

Document 51299

Manufactured by Fairbanks Scale, Inc.
821 Locust Street
Kansas City, MO 64106

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