MID:COM Matrix

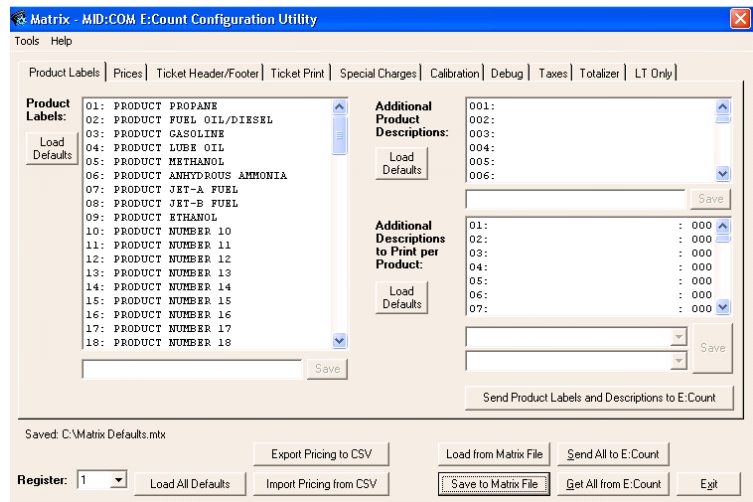## *E:Count Configuration Utility*
User's Guide

Reference for Using the MID:COM Matrix E:Count Configuration Utility

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MID:COM   THE ONE THAT WORKS!

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ECount Matrix Users Guide E180 v1.00.docx

Disclaimer

Contact Information

You have several ways to interact with Midwest Computer Register, Corp. and its staff. If you have a suggestion you can email, write, or call us with the information below.

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System Requirements

The recommended system configuration for the MID:COM E:Count Matrix is a computer running Microsoft Windows Xp® Professional with a 2.0 GHz processor and at least 128 megabytes (MB) of RAM. Below are the minimum requirements your computer needs to run the MID:COM E:Count Matrix.

Minimum Requirements	
Computer/Processor	Computer with Pentium 133 megahertz (MHz) or higher processor; Pentium III recommended
Memory	64 MB of RAM; other programs running simultaneously may require additional memory
Hard Disk	Hard disk space requirements will vary depending on configuration; custom installation choices may require more or less. Listed below are the minimum hard disk requirements for MapPoint: ▪ 25 megabytes for full configuration – **recommended** Users without Windows XP, Windows 2000, Windows Me, or Office 2000 Service Release 1 (SR-1) require an extra 50 MB of hard disk space for System Files Update.
Operating System	Windows 98, Windows 98 Second Edition, Windows Millennium Edition (Windows Me), Windows NT 4.0 with Service Pack 6 (SP6) or later, * Windows 2000, Windows XP, Windows Server 2003, or later
Drive	none
Display	XGA (1024x768) or higher-resolution monitor with 256 colors
Peripherals	Microsoft Mouse, Microsoft IntelliMouse®, or compatible pointing device

* Systems running Windows NT 4.0 SP6 must have Microsoft Internet Explorer 4.01 SP1 or later.

1.0.0 Installation
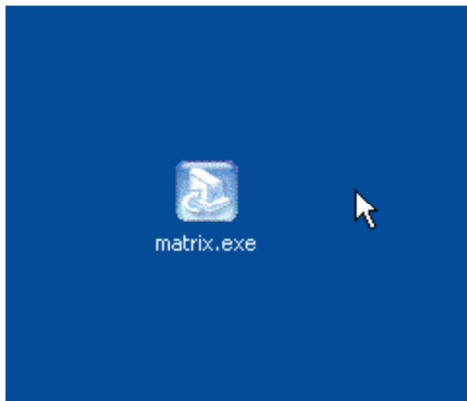
Figure 1. Matrix Installation File on the Windows Desktop

Install Step 1 – Launch install.

Locate and then double-click the **matrix.exe** *Matrix Installation Program*. This may be obtained from the MID:COM website or you may order a CD directly from MID:COM.
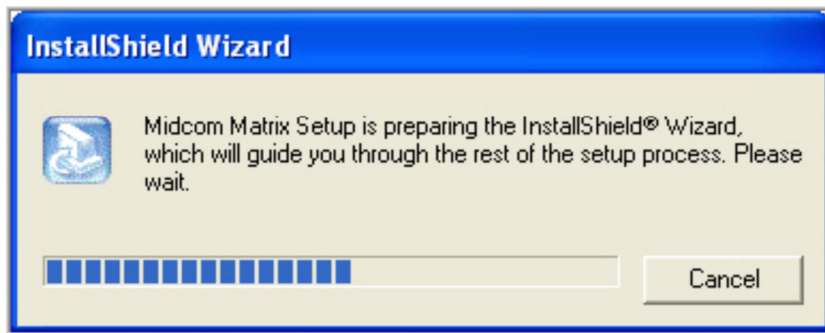
Figure 2. Matrix Install Progress Bar

Install Step 2 – Extracting Files.

The *Matrix Installation Program* will show a progress bar while extracting the files necessary for the installation to a temporary location on your computer.
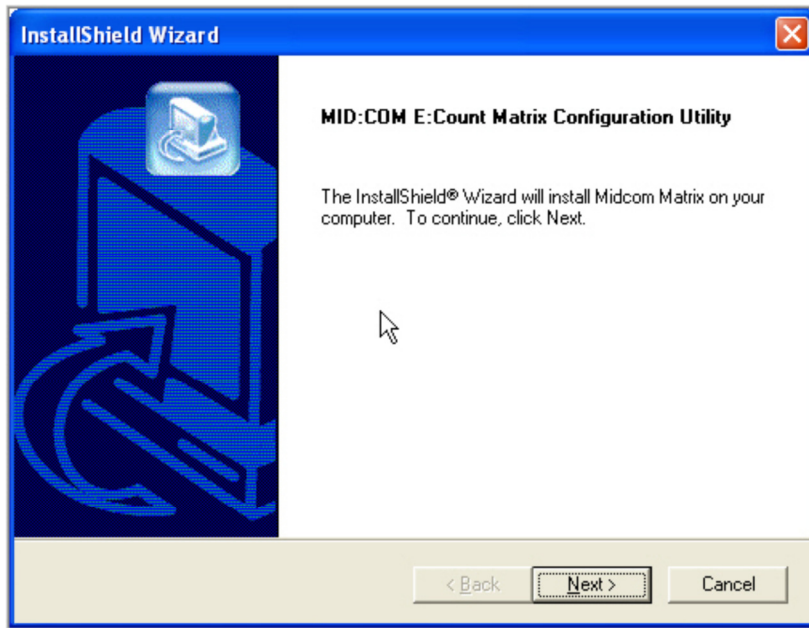
Figure 3.   Matrix Install Welcome Screen

Install Step 3 – Welcome Screen.
After all files have been extracted click <Next> to continue.

Figure 4.   Matrix Install License Agreement

Install Step 4 – License Agreement.
Accept the terms of the Midwest Computer Register Software End-user License Agreement in order to install the MID:COM software. Select <Yes> to accept the license and continue the install.
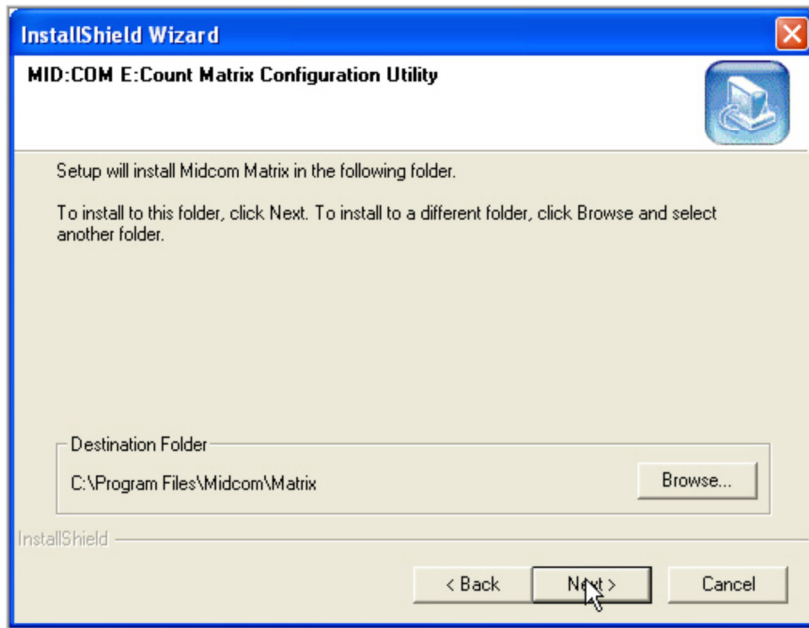
Figure 5. Matrix Install Destination Folder

Install Step 5 – Destination Folder.

The default installation folder should be acceptable for most users, select <Next> to continue.
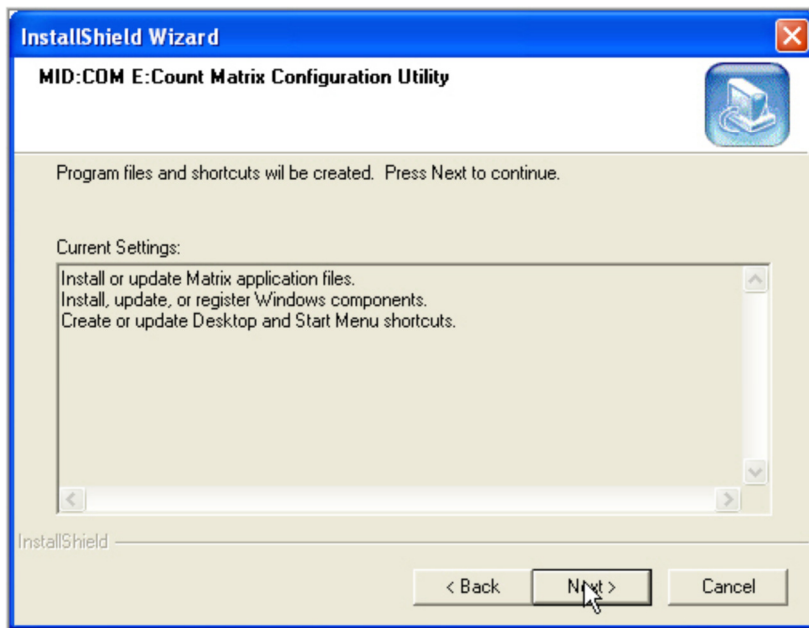
Figure 6. Matrix Install System Modification Summary

Install Step 6 – System Modification Summary.

A summary of the changes is displayed, select <Next> to begin installing files and configuring your system.
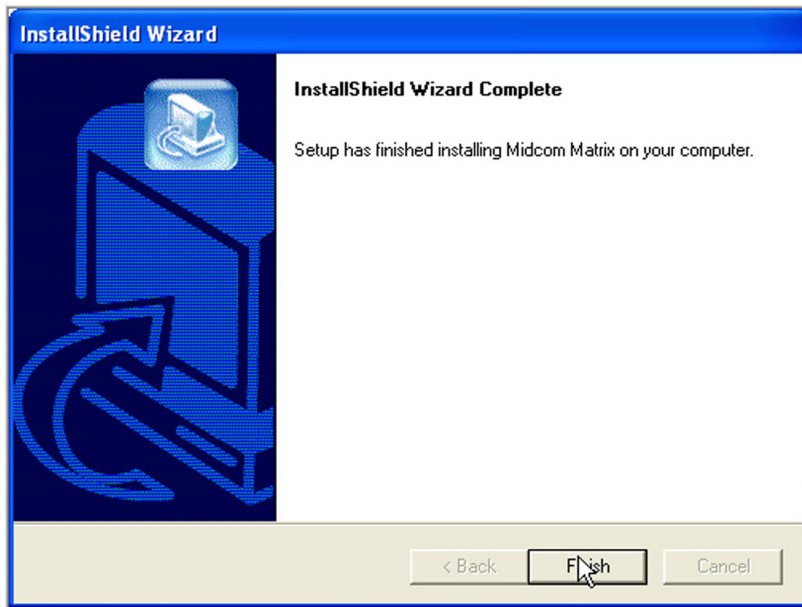
Figure 7. Matrix Install Finished

Install Step 7 – Install Finished.

After all necessary files have been installed, select <Finish> to complete the installation.

2.0.0 Operation
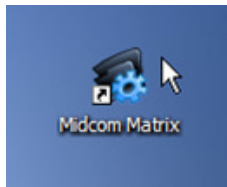
Figure 8. Midcom Matrix Shortcut on the Windows Desktop

To start the Matrix application double-click the **_Midcom Matrix_** shortcut on the desktop.
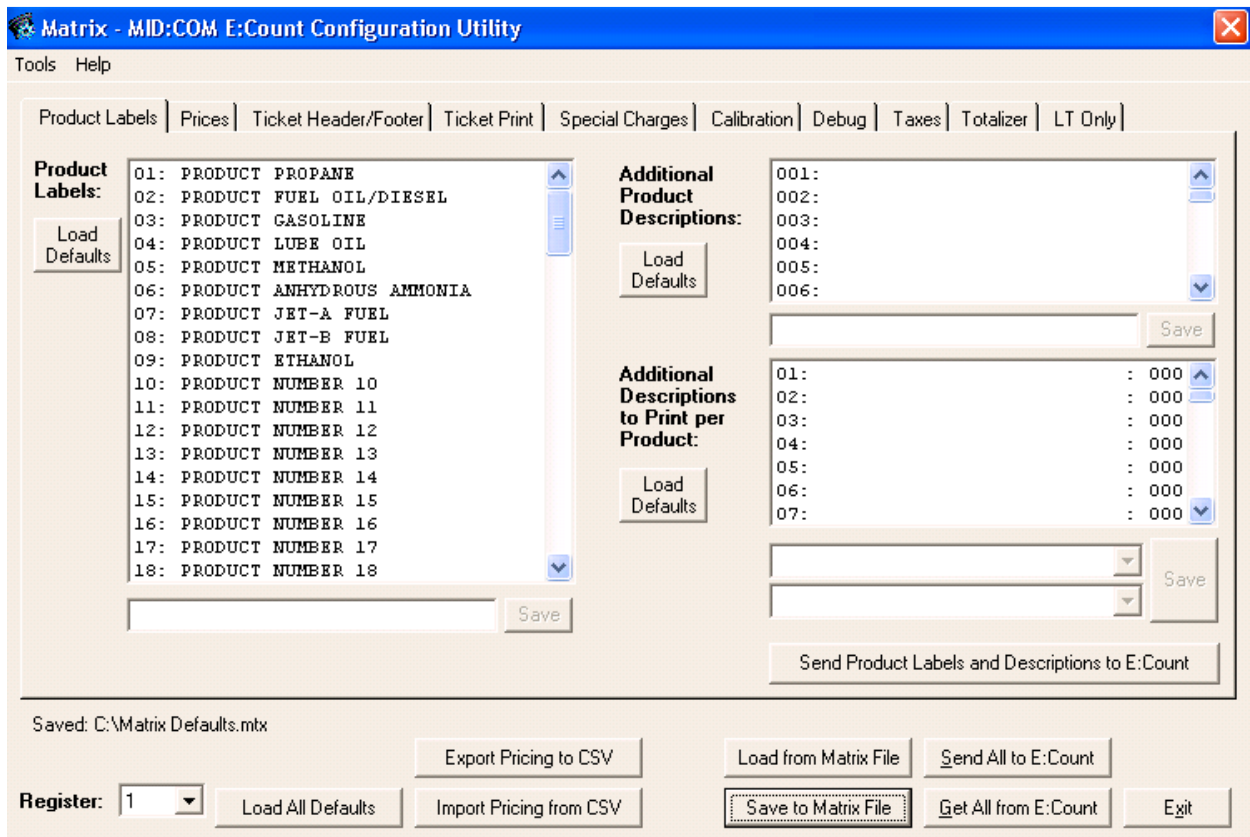
Figure 9. Matrix Main Screen

The opening screen will display the default Product Label Configuration and there will be no Register selected.

2.1.0 MID:COM Matrix Main Screen
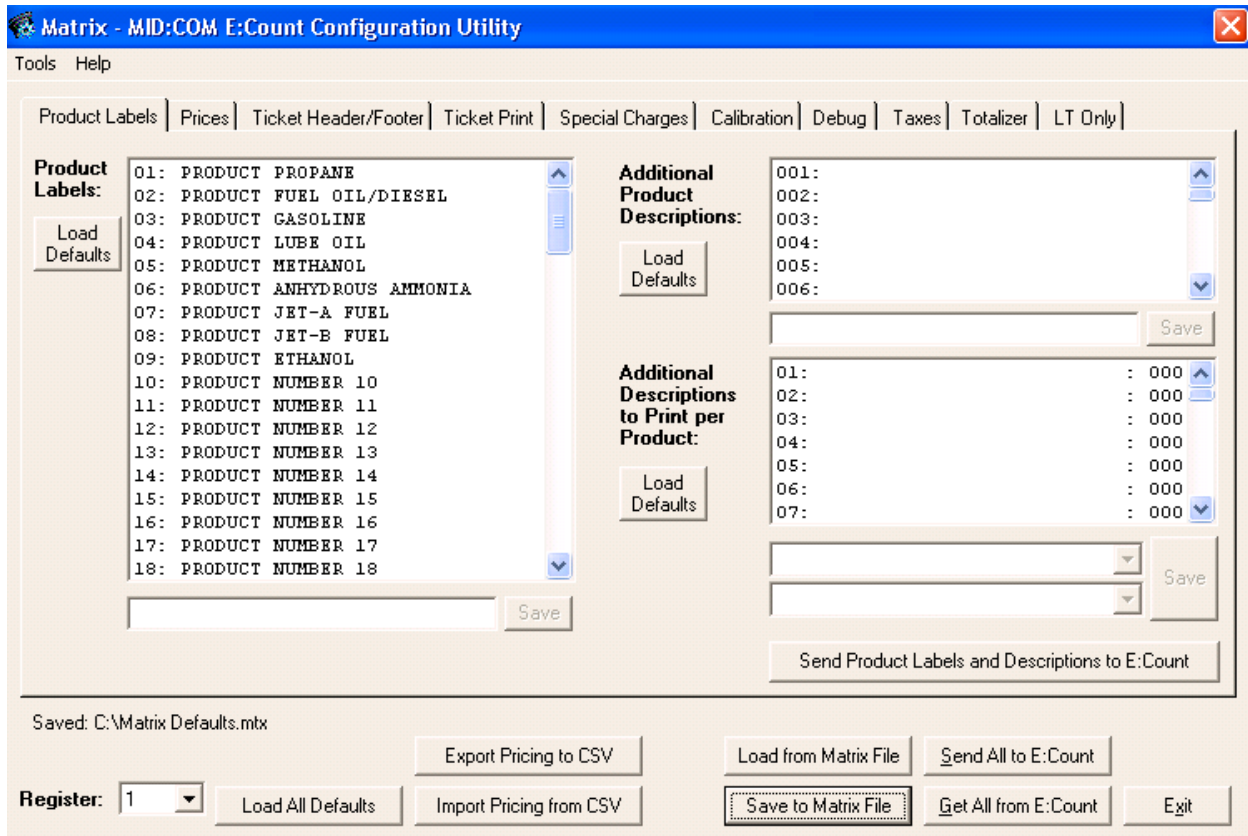
Figure 10.   Sections of the Matrix Main Screen

Menus
Tools and Help: Selecting a Menu opens up a new screen with additional functions for the operator.

Tabs
Product Labels, Product Prices, Ticket Header and Footer, Ticket Configuration, Special Charges, Calibration Data, Debug, Taxes, Totalizer, and LT: Selecting a Tab displays information specific to that Tab and allows the operator to edit data for the E:Count on that Tab.

Commands
Register Selection, Load All Defaults, Export Pricing to CSV, Import Pricing from CSV, Load from File, Save to File, Get All from E:Count, Send All to E:Count, and Exit: Each is a special command that may be used at any time.
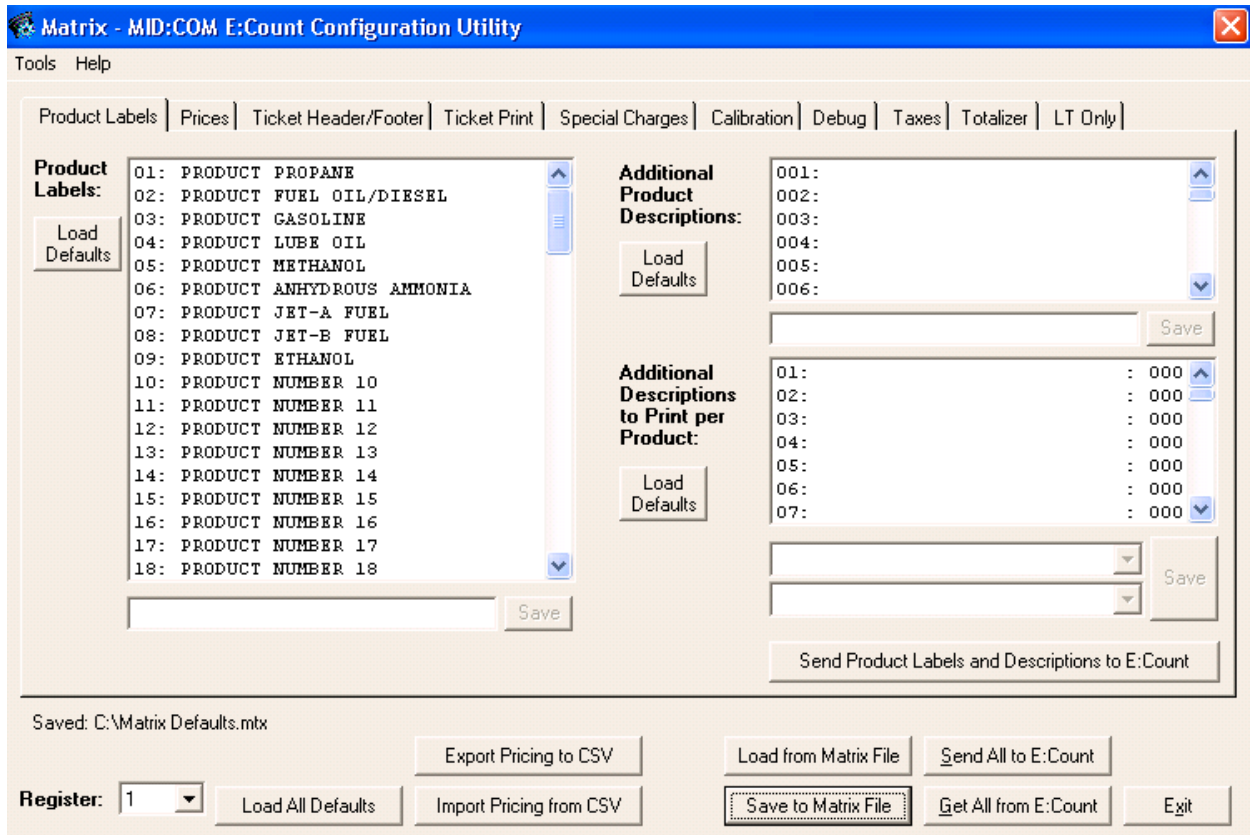
Figure 11. Commands

```
Register ...............: Select Register 1 or Register 2.
Load All Defaults .......: Clear all settings and load defaults.
Import Pricing from CSV .: Load all pricing from CSV file.
Export Pricing to CSV ...: Create CSV file of pricing data.
Load from Matrix File ...: Load all settings from a file.
Save to Matrix File......: Saves all current settings to a file.
Get All from E:Count ....: Read all settings from an E:Count.
Send All to E:Count .....: Send all settings to an E:Count.
Exit ....................: End the program, if changes have not
                           been saved the operator will be
                           prompted to save changes.
```

Note: The Calibration, Taxes, Totalizer, and LT labels must be sent separately.

2.2.0 Menus

2.2.1 – Tools Menu
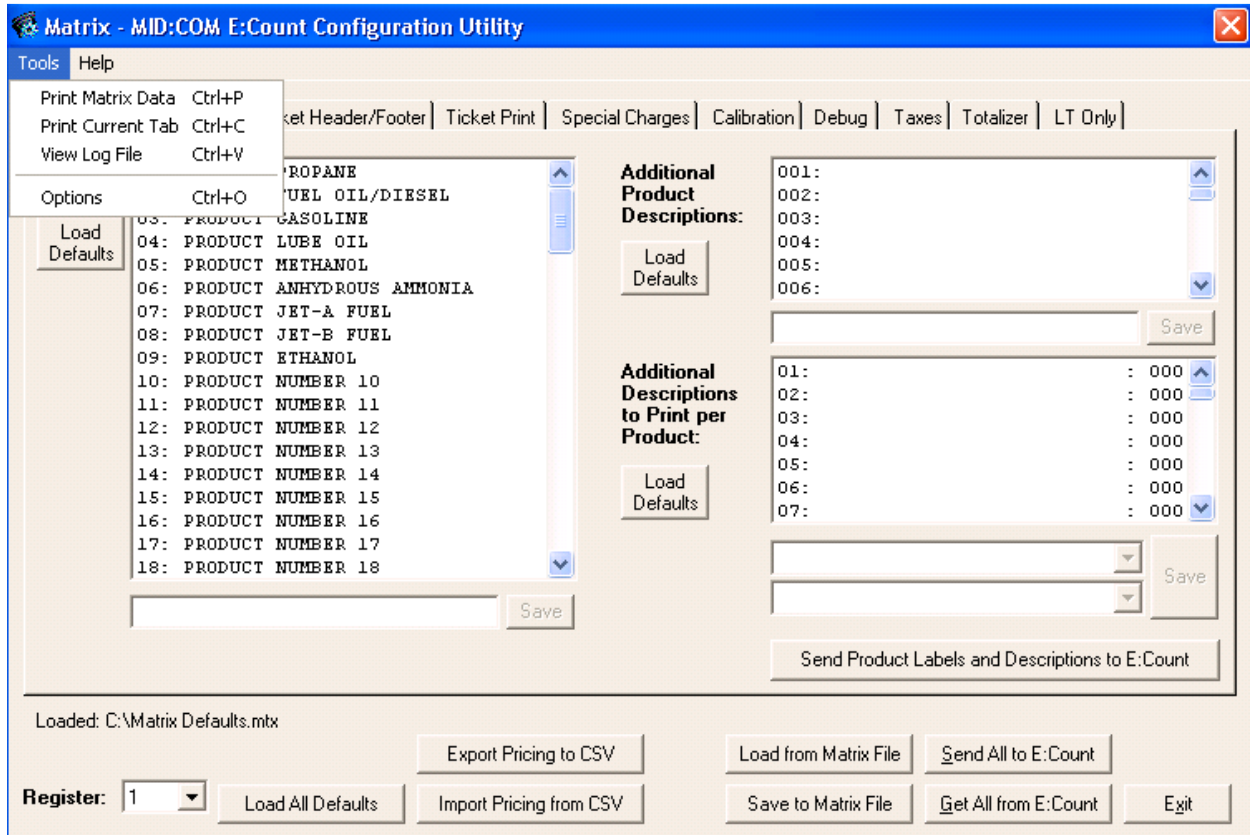
Figure 12. Tools Menu

```
Print Matrix Data .......: Print all settings.
Print Current Tab .......: Print settings on the Active Tab.
View Log File ...........: Display the Matrix program log file.
Options .................: Display the Matrix Options screen.
```

2.2.3 – Help Menu
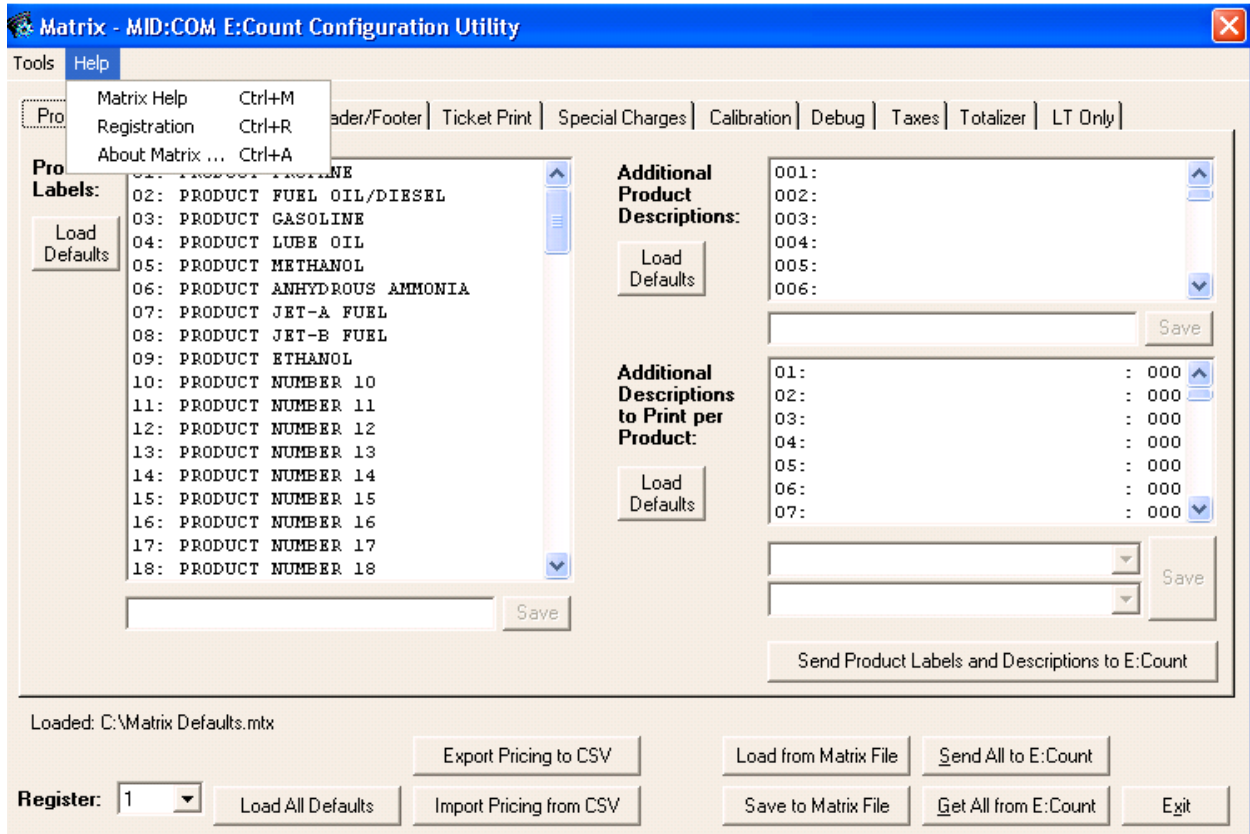
Figure 13. Help Menu

```
Matrix Help ........: Display the Matrix Help file.
Registration .......: Display the Registration screen.
About Matrix .......: Display the Matrix About screen.
```

2.3.0 Tabs

2.2.1 Product Labels Tab
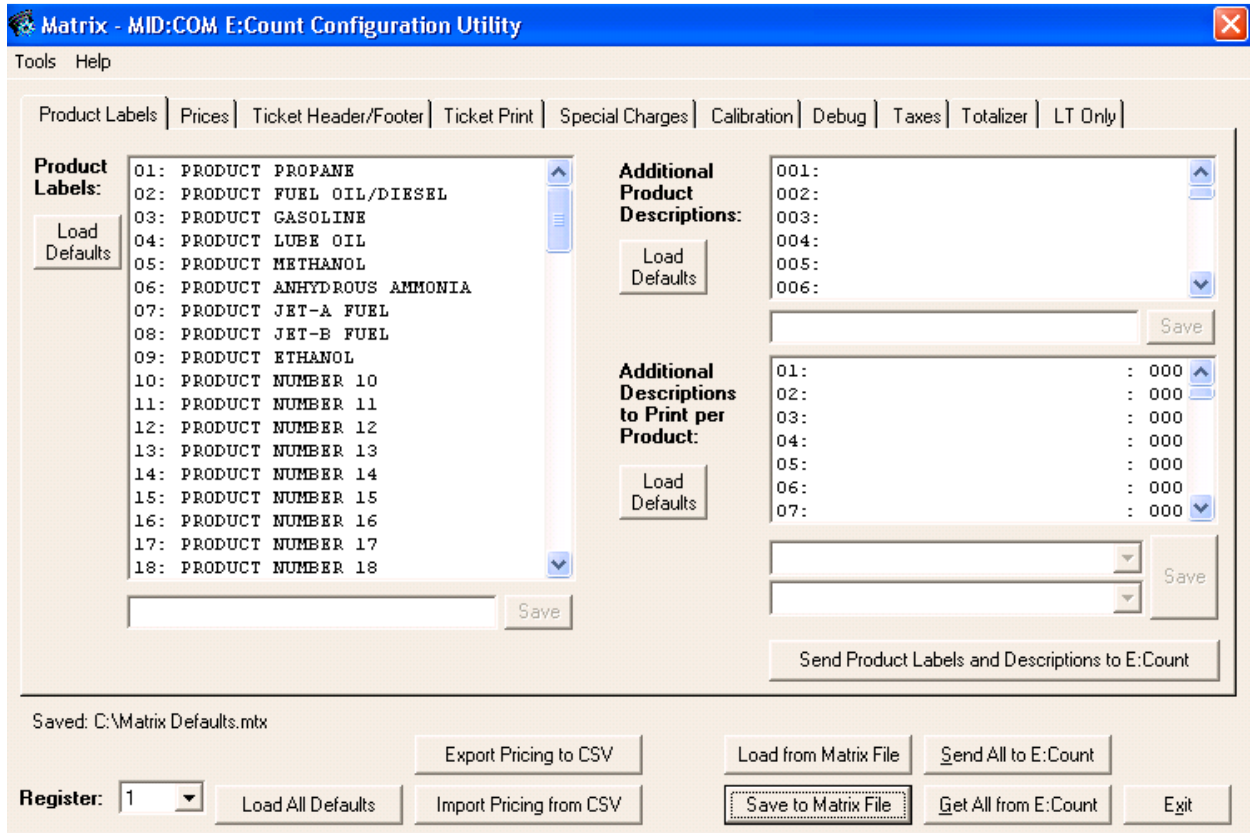
Figure 14. Product Labels Tab

Product Labels
To change the Product Label for a specific product, click the row for the desired Product Label. The editing field below the list will display the Product Label and allow the user to change the label. Select <Save> to save the Product Label.

Additional Product Descriptions
Up to 100 Additional Product Description Lines are available. To change a specific Additional Product Description Line, click the row of the desired Additional Product Description. The editing field below the list will display the Additional Product Description and allow the user to change the Product Description. Select <Save> when editing is complete.

The product Description fields allow additional information to be displayed on a per-product basis.

<u>Additional Product Description to Print per Product</u>

To specify which Product Description(s) should be printed on the ticket for a particular product, if any, click the row corresponding to the desired product.

In the "Start Line" combo box below the list select the Initial Product Description to print, or select {none} to indicate that no Extra Description should print for that product.

In the "End Line" combo box below the list select the Final Product Description to print, or select {none} to indicate that no Extra Description should print for that product.

All lines between and including the "Initial Line" and the "Final Line" will be printed on every delivery ticket meter block where that particular product is delivered.

Select <Save> to save the Additional Product Description(s) for the selected product.

<u>Send Product Labels to E:Count</u>

When the desired Product Labels and Product Descriptions have been configured and are ready to be sent to the E:Count, select the *Send Product Labels to E:Count* button. The E:Count must be powered up and the serial cable must be connected from the Power Control Module (PCM) to the computer running the Matrix. A progress bar will display the status of the transmission of the Product Labels. When the progress bar reaches 100% the transmission is complete.

<u>Load Defaults – Product Labels and Product Descriptions</u>

To reset the Product Labels, Product Descriptions, or Selected Product Descriptions to the default values and erase all changes for all products select the appropriate Load Defaults button. If the existing settings have not been saved a prompt will appear and allow the current settings to be saved.

2.3.2 Product Pricing Tab
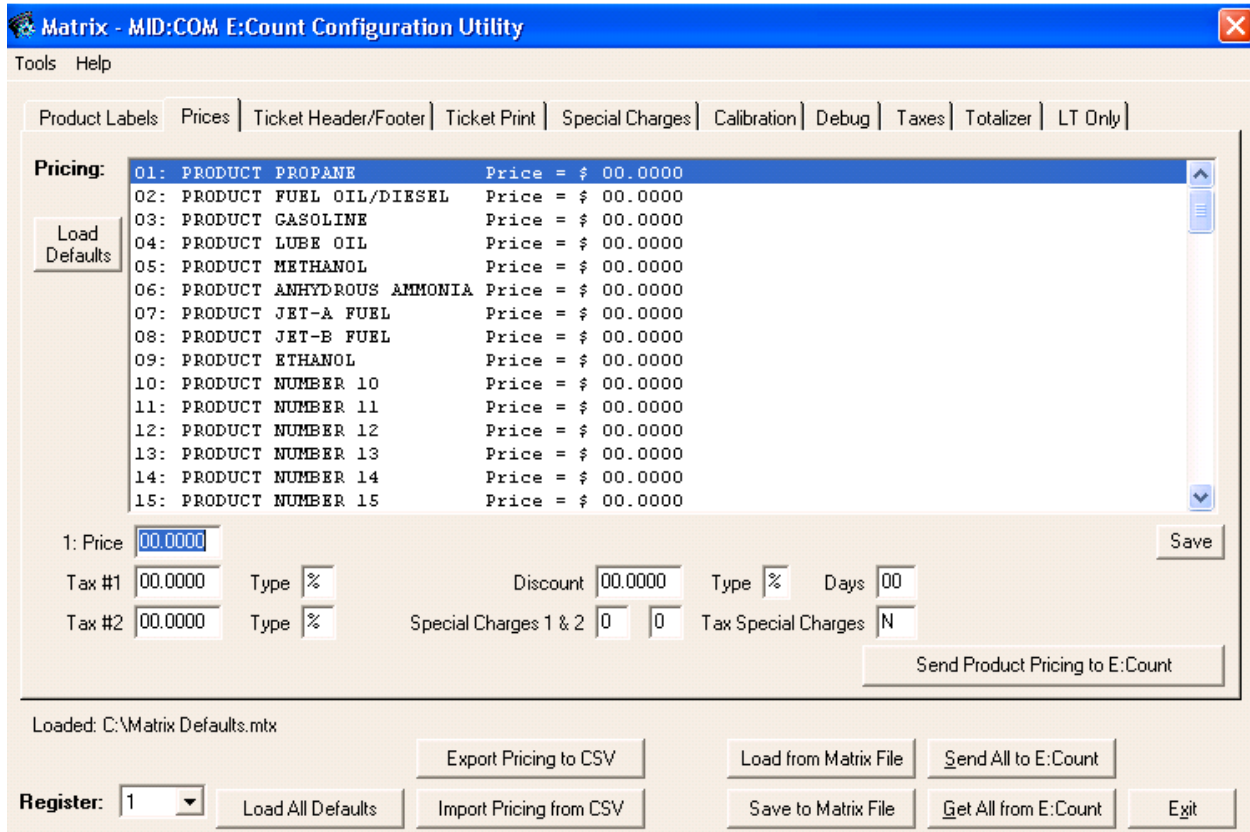
Figure 15. Product Pricing Tab

Product Pricing

To change the Price, Tax Rates, Tax Types, Discount, and Special
Charges for a specific product click the row for the desired
product number, the editing fields below the list will display
the Product Pricing data and allow the user to modify them.
Select <Save> to save the Product Pricing data.

Send Product Pricing to E:Count

When the desired Product Pricing has been configured and is
ready to be sent to the E:Count, select the *Send Product Pricing
to E:Count* button. The E:Count must be powered up and the
serial cable must be connected from the Power Control Module
(PCM) to the computer running the Matrix. A progress bar will
display the status of the transmission of the Product Pricing.
When the progress bar reaches 100% the transmission is complete.

Load Defaults – Product Pricing

To reset the Product Pricing to the default values and erase all
changes for all products select the Load Defaults button. If
the existing settings have not been saved a prompt will appear
and allow the current settings to be saved.

Product Pricing Fields

Price   : A value from 00.0000 to 99.9999.
Tax #1, #2   :
Discount   :

Tax Type   : Either % or $:
Discount Type   : $ calculates per unit volume,
                : % calculates on the amount.

Special Charge : 0, 1-9:
                : 0 indicates no Special Charge is to be applied
                : 1-9 is the index of the Special Charge
                : (see Special Charges)

Discount Days   : 00-99:
                : The number of Discount Days printed on the
                : ticket. The number of days the customer is
                : allowed to pay the invoice and subtract the
                : discount amount.

Tax Special   : Y/N:
Charges   : Whether or not the special charges are subject
                : to the same taxes as the Product.

2.3.3 Ticket Header and Footer Tab
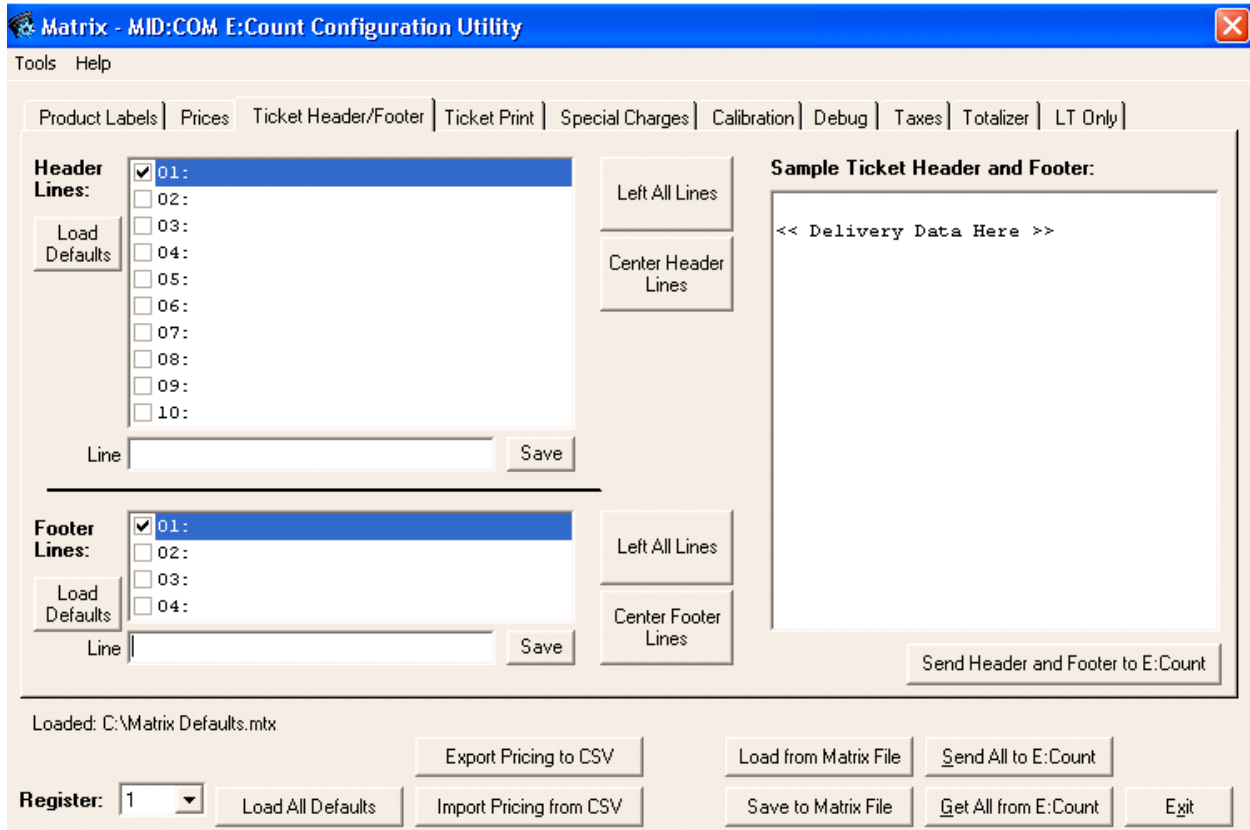
Figure 16. Ticket Header and Footer Tab

Ticket Header and Footer

Click the row corresponding to a line to be changed. The editing field below the list will display the Ticket Header or Ticket Footer line and allow the user to modify it. Select <Save> to save the Ticket Header or Ticket Footer line.

To indicate the line should be printed make sure the checkbox next to the line is checked. To indicate a line should not be printed clear the checkbox for that line.

A blank line in either the Header or the Footer will be printed if the checkbox next to the line is selected and there is no text on the line.

Sample Ticket Header and Footer

The sample will always reflect what the current Ticket Header and Ticket Footer will look like when the delivery ticket printed. The Ticket Configuration Tab will also be updated.

<u>Send Header and Footer to E:Count</u>

When the desired Ticket Header and Ticket Footer have been configured and are ready to be sent to the E:Count, select the *Send Header and Footer to E:Count* button. The E:Count must be powered up and the serial cable must be connected from the Power Control Module (PCM) to the computer running the Matrix. A progress bar will display the status of the transmission of the Ticket Header and Ticket Footer. When the progress bar reaches 100% the transmission is complete.

<u>Load Defaults – Ticket Header and Footer</u>

To remove all Ticket Header and Ticket Footer lines and reset the Ticket Header and Ticket Footer to the default (blank) values, select Load Defaults for the desired Ticket section. If the existing settings have not been saved a prompt will appear and allow the current settings to be saved.

2.3.4 Ticket Configuration Tab
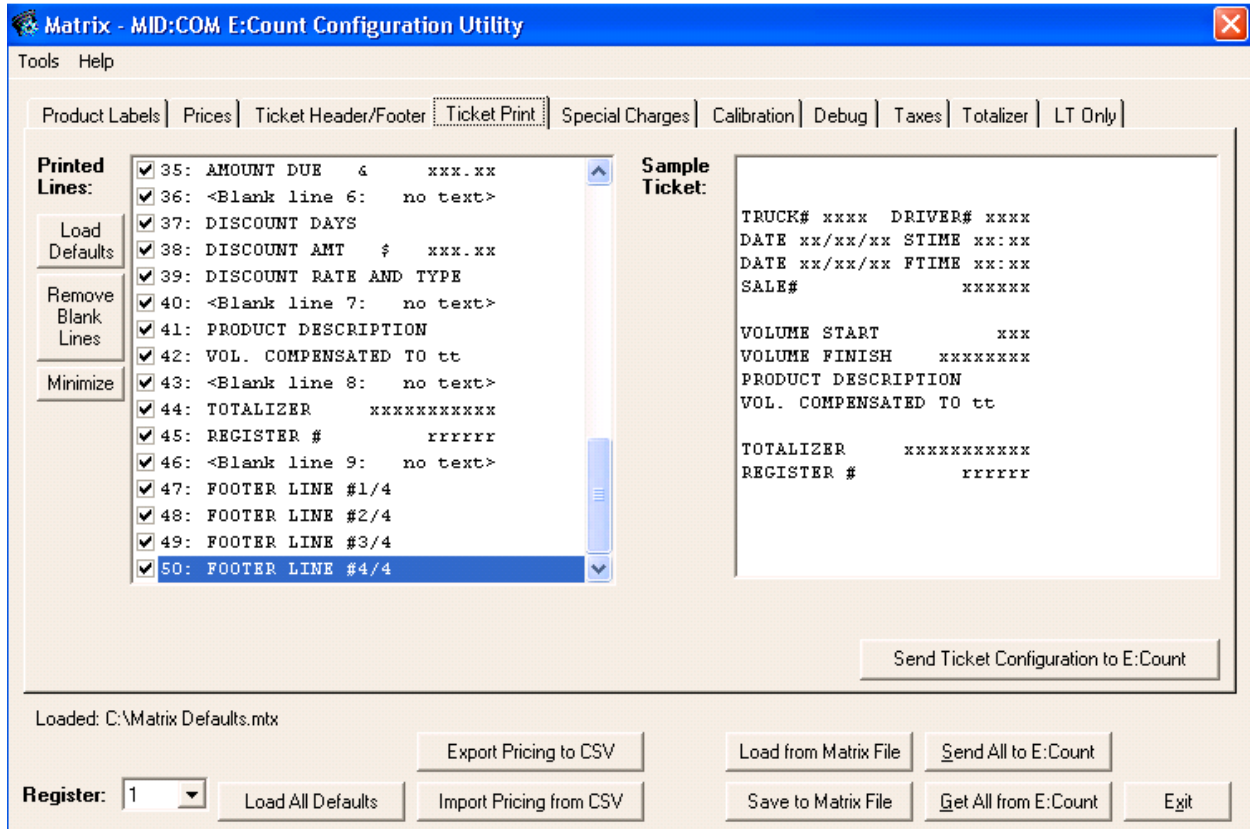

Figure 17. Ticket Configuration Tab

Printed Lines
There are multiple sections of data printed on the Delivery Ticket:
1. Ticket Header
2. Meter Time Block
3. Product Pricing
4. Meter Product Block
5. Ticket Footer

The lines that print on the ticket depend on the Product Calibration settings, on the Product Pricing settings, on the configuration of the Ticket Header and the Ticket Footer, and also on the setting of user-configurable lines.

To remove a line from the ticket or add a line back to the ticket, click on the checkbox to the left of the line to be removed. If the check box remains checked the line you have selected is unable to be removed.

Sample Ticket

When the Ticket Configuration, Ticket Header, Ticket Footer, or Product Pricing are modified the Sample Ticket will be updated to reflect how the ticket will print.

If any Product Pricing value is changed from the default values all Product Pricing lines will be displayed on the Sample Ticket.

Send Ticket Configuration to E:Count

When the desired Ticket Configuration has been configured and is ready to be sent to the E:Count, select the *Send Ticket Configuration to E:Count* button. The E:Count must be powered up and the serial cable must be connected from the Power Control Module (PCM) to the computer running the Matrix. A progress bar will display the status of the transmission of the Ticket Configuration. When the progress bar reaches 100% the transmission is complete.

Load Defaults – Ticket Configuration

To reset the Ticket Configuration to the default (all lines printed) select the Load Defaults button. If the existing settings have not been saved a prompt will appear and allow the current settings to be saved.

Remove Blank Lines

To remove all blank lines from the Ticket Configuration while leaving all lines containing text intact, select Remove Blank Lines. The Sample Ticket will be updated to reflect the change in the Ticket Configuration. If the existing settings have not been saved a prompt will appear and allow the current settings to be saved.

Minimize

To remove all lines that are not required from the Ticket Configuration, select Minimize. The Sample Ticket will be updated to reflect the current Ticket Configuration. If the existing settings have not been saved a prompt will appear and allow the current settings to be saved.

2.3.5 Special Charges Tab
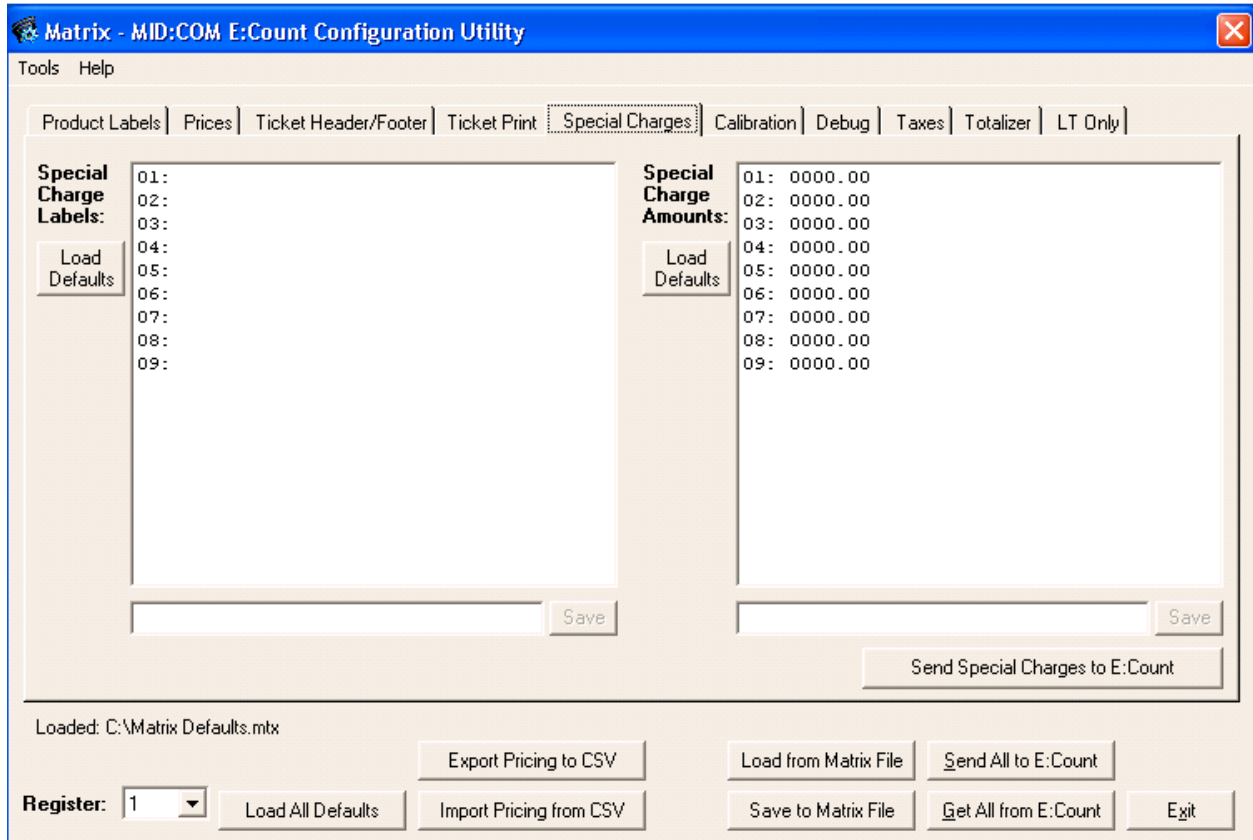
Figure 18.   Special Charges Tab

Special Charge Labels

To change the Special Charge Label for a specific Special
Charge, click the row for the desired Special Charge.   The
editing field below the list will display the Special Charge
Label and allow the user to change the label.   Select <Save> to
save the Special Charge Label.

Special Charge Amounts

To change the Special Charge Amount for a specific Special
Charge, click the row for the desired Special Charge. The
editing field below the list will display the Special Charge
Amount and allow the user to change the amount. Select <Save>
to save the Special Charge Amount.

The Special Charge Amounts are not editable at the time of
delivery. The Special Charge Amount(s) will be added to each
Delivery Ticket when the Delivery Product includes Pricing and
has been configured for one or two Special Charges.

The specific Special Charge to include for each product is
configured on the Product Pricing tab.

Send Special Charges to E:Count

When the desired Special Charges have been configured and are
ready to be sent to the E:Count, select the *Send Special Charges
to E:Count* button. The E:Count must be powered up and the
serial cable must be connected from the Power Control Module
(PCM) to the computer running the Matrix. A progress bar will
display the status of the transmission of the Special Charges.
When the progress bar reaches 100% the transmission is complete.

Load Defaults – Special Charges and Special Charge Labels

To reset the Special Charges to the default values and erase all
changes select the appropriate Load Defaults button. If the
existing settings have not been saved a prompt will appear and
allow the current settings to be saved.

2.3.5 Calibration Tab
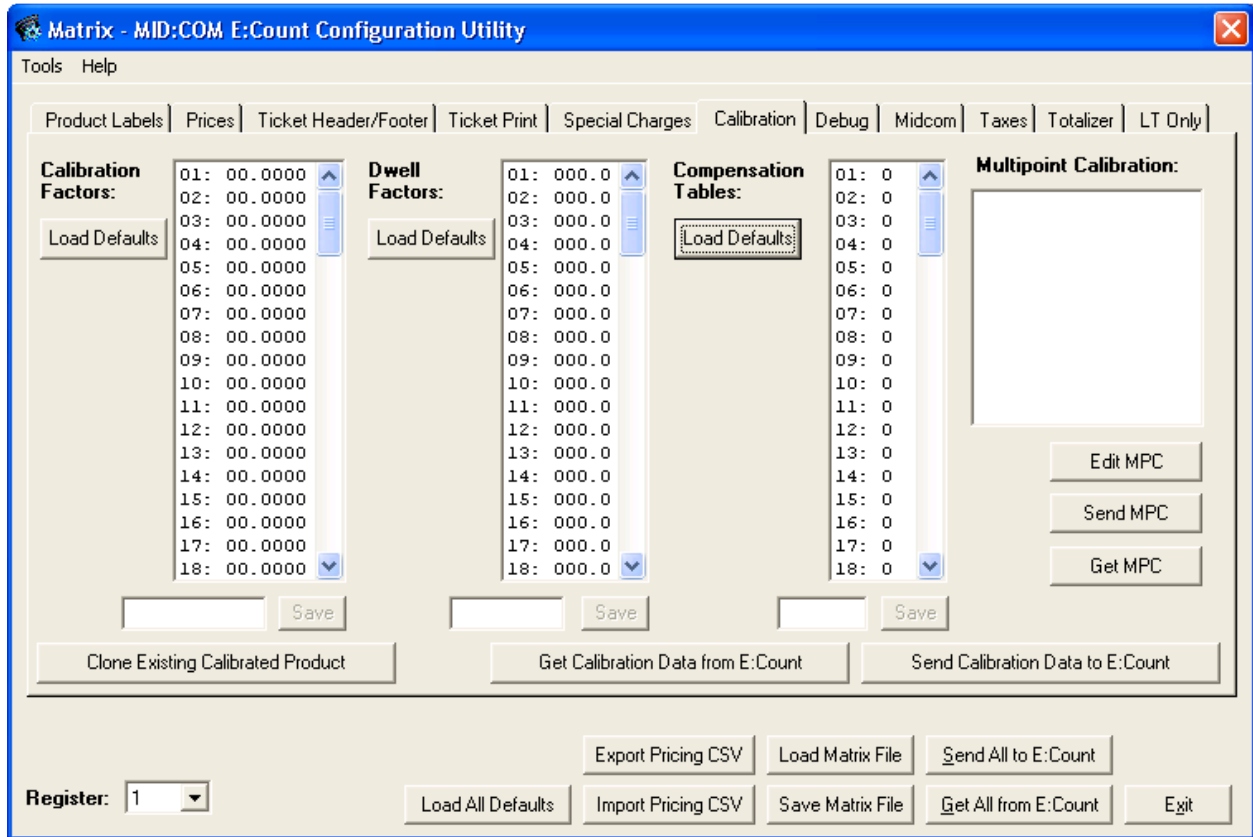
Figure 19.   Calibration Tab

Calibration Factors

In order for a product to be valid and to be deliverable by the
E:Count the desired product must have a valid Calibration
Factor.

To change the Calibration Factor for a specific Product, click
the row for the desired Calibration Factor. The editing field
below the list will display the Calibration Factor and allow the
user to change the factor. Select <Save> to save the
Calibration Factor.

Valid Calibration Factors are from 0.0001 to 1.9999. During the
Calibration process the Prover will provide the actual
Calibration Factor that should be used for the product being
proved.

Dwell Factors

To change the Dwell Factor for a specific Product, click the row
for the desired Dwell Factor. The editing field below the list
will display the Dwell Factor and allow the user to change the
factor. Select <Save> to save the Dwell Factor.

Compensation Tables

To change the Compensation Table for a specific Product, click
the row for the desired Compensation Table. The editing field
below the list will display the Compensation Table and allow the
user to change the table number. Select <Save> to save the
Compensation Table.

Set the Compensation Table value to the corresponding built-in
table value of the actual product being delivered:

```
    Compensation Table #      Description
    --------------------      -----------
             00               UNCOMPENSATED
             01               PROPANE
             02               DIESEL/HEATING OIL
             03               GASOLINE
             04               LUBE OIL
             05               METHANOL
             06*              ANHYDROUS AMMONIA (E179 and older)
             06*              AVIATION GASOLINE (E180 and newer)
             07               JET-A FUEL
             08               JET-B FUEL
             09               ETHANOL
```

Note: If a product is *not* to be temperature compensated the
Compensation Table should be 0 (uncompensated).

Load Defaults – Calibration Factor, Dwell Factor, Compensation
Table

To reset the Calibration Factors, Dwell Factors, or Compensation
Tables to the default values and erase all changes select the
appropriate Load Defaults button. If the existing settings have
not been saved a prompt will appear and allow the current
settings to be saved.

(continued)

Get Calibration Data from E:Count

The desired Calibration Factors, Dwell Factors, and Compensation Tables may be retrieved from the E:Count and saved on a computer. To retrieve the Calibration Data from the E:Count, select the *Get Calibration Data from the E:Count* button. The E:Count must be powered up and the serial cable must be connected from the Power Control Module (PCM) to the computer running the Matrix. A progress bar will display the status of the transmission of the Calibration Data. When the progress bar reaches 100% the transmission is complete.

Send Calibration Data from E:Count

When the desired Calibration Factors, Dwell Factors, and Compensation Tables have been configured and are ready to be sent to the E:Count, select the *Send Calibration Data to E:Count* button. The E:Count must be powered up and the serial cable must be connected from the Power Control Module (PCM) to the computer running the Matrix. A progress bar will display the status of the transmission of the Calibration Data. When the progress bar reaches 100% the transmission is complete.

Note: In order to send Calibration Data to the E:Count the Calibration Bolt must have first been loosened and then tightened; after doing so the Calibration Data may be sent to the E:Count until the next time the E:Count is shut down. This prevents Calibration Data from being overwritten unless the meter and register are being calibrated during the Proving process. If the operator attempts to send Calibration Data to the E:Count without the Calibration Bolt having been loosened and then tightened the operator will get an error in the Matrix Software as shown below.

(continued)
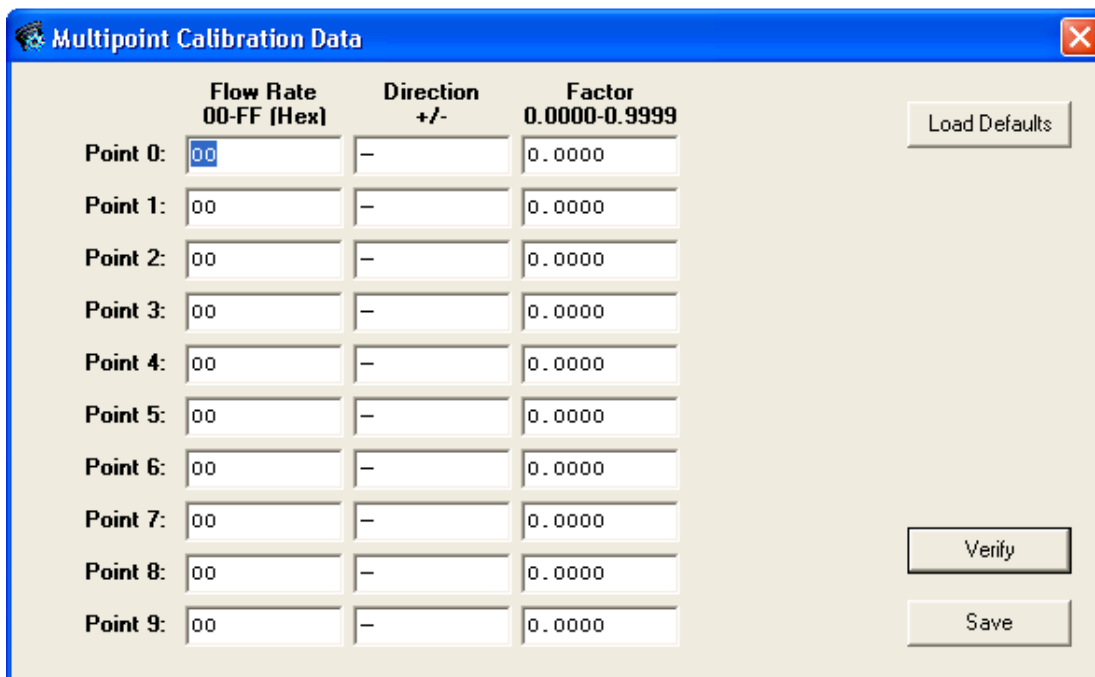
<u>MultiPoint Calibration Functions</u>

The MultiPoint Calibration data is only valid for those versions that support Multipoint Calibration, M173, E180+ and L415+.

For more information on MultiPoint Calibration refer to the MultiPoint Calibration Manual for the ECount MCR-05 and ECount LT MCR-09.

Edit MPC

Display the MultiPoint Calibration Factor Data Entry and Edit Form to allow the entry and editing of MPC data.

Figure 20. MultiPoint Calibration Factor Data Entry and Edit Form

Send MPC

Send the MultiPoint Calibration Factors to the ECount. The Calibration Bolt must have been both loosened and tightened prior to sending the MPC Data to the register similar to the regular Calibration Data.

Get MPC

Get the existing MultiPoint Calibration Factors from the ECount.

2.3.6 Taxes Tab
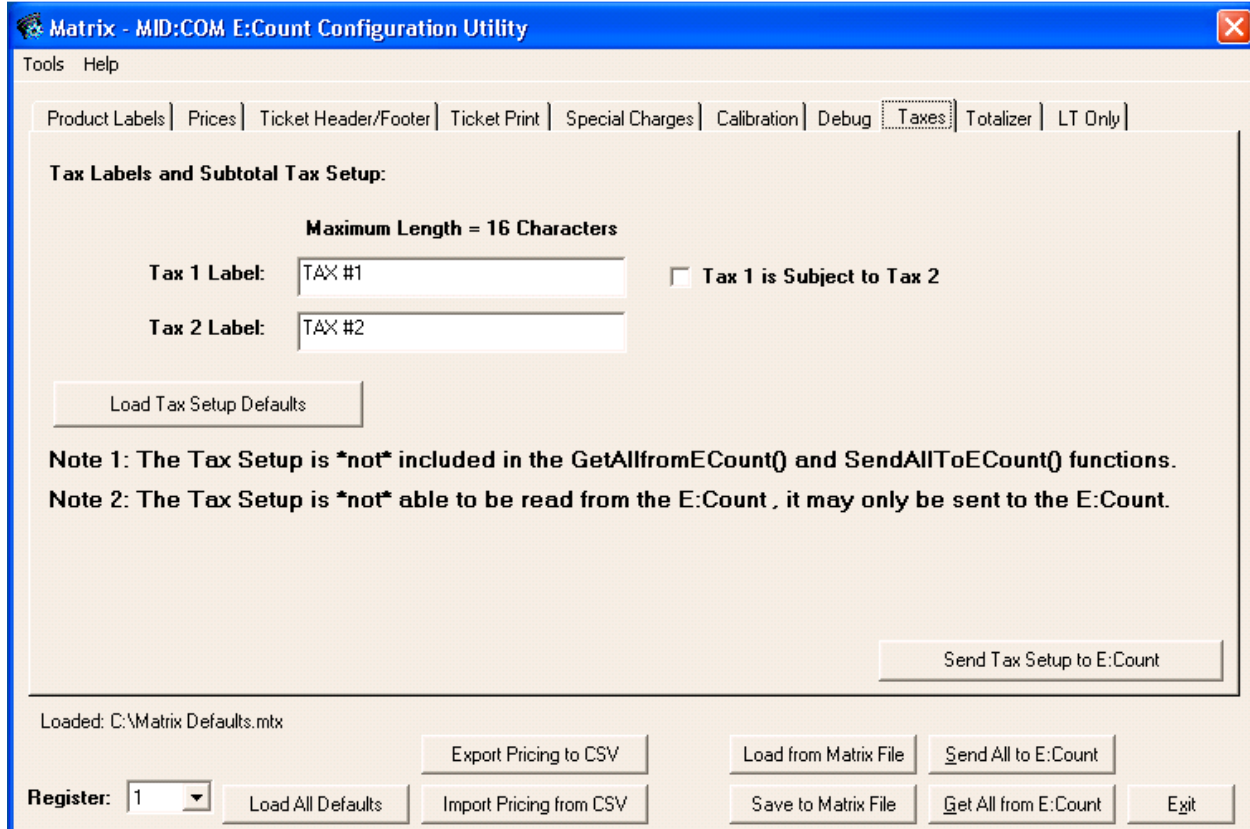
Figure 21. Taxes Tab

Tax Labels
The Default Tax Labels for all products for Tax 1 and Tax 2 are
as follows:
     Tax 1:   TAX #1
     Tax 2:   TAX #2

To change the Tax Label for either tax, select and edit the test
as desired. The labels are hard-coded to be upper-case.

Subtotal Tax
If Tax 2 is a Subtotal Tax, or if "Tax 1 is Subject to Tax 2"
check the check box labeled "Tax 1 is Subject to Tax 2". The
calculation of Tax 2 will include the value of Tax 1 in addition
to all other values being taxed. Select <Save> to save the
Calibration Factor.

As indicated, these values are "Write Only" and are not included
in the "Get All" or "Send All" operations.
Load Defaults – Tax Labels and Subtotal Tax

To reset the Tax Labels and Subtotal Tax to the default values and erase all changes select the Load Tax Setup Defaults button. If the existing settings have not been saved a prompt will appear and allow the current settings to be saved.

Send Tax Setup to E:Count

To send the new Tax Labels and the Subtotal Tax setting to the E:Count select "Send Tax Setup to E:Count". The existing values in the E:Count will be over-written with the displayed values.

3.0.0 E:Count Serial Communication
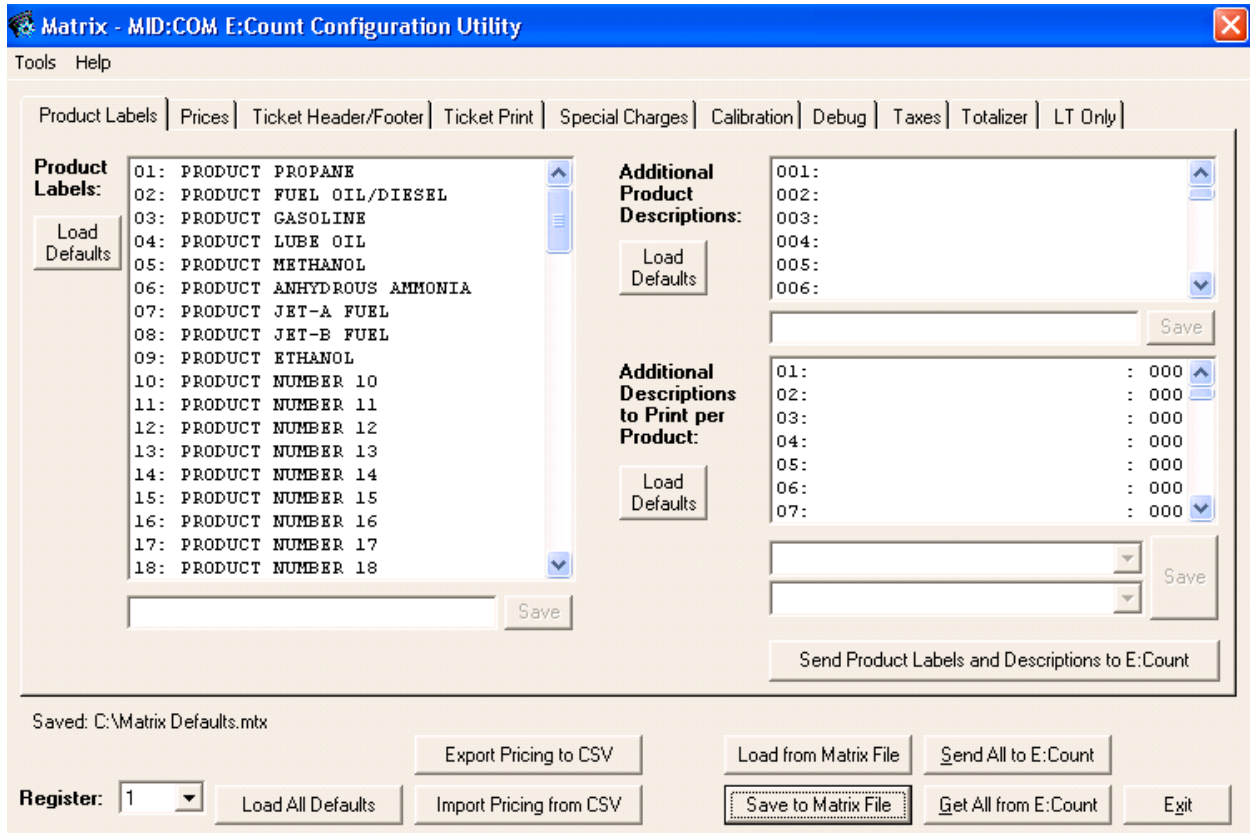
Figure 22. Register Selection

Register Selection

In order to communicate with an E:Count via a serial cable, the Matrix Software must know which E:Count to communicate with.

Register 1 will be valid for most users. Register 2 is only valid in a dual register configuration with 2 registers connected to a single Power Control Module (PCM).

Changing the Register setting from Register 1 to Register 2 allows the operator to configure either of the E:Count registers on a vehicle.

The value of the Register setting will be saved and restored each time the program is run.

Options

On the main Matrix screen select the *Tools* Menu and then select *Options*.
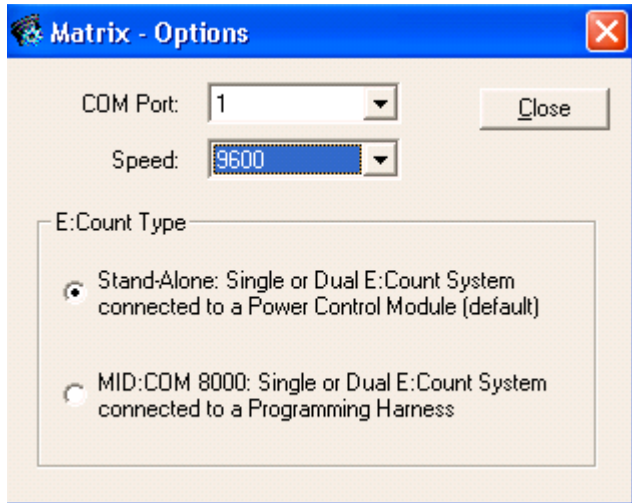
Figure 23. Options

COM Port and Baud Rate
Set the COM Port correctly and set the Baud Rate to 9600.

The E:Count Power Control Module (PCM) has a 9-pin female D-sub connector for serial communication interfacing with external devices labeled "Serial 1". It follows the RS-232 protocol. It is configured as a DCE device. It is set up to communicate using 9600,N,8,1. The communicating software must be set up the same, and must be set to NO hardware handshaking. It uses pins 2, 3, and 5, and requires a regular cross-over serial cable assembly to connect to DTE devices such as a P.C., laptop, or handheld.

4.0.0 Print Data

To view and print a list of settings, either all or just the current tab, select the *Data* menu then select *Print All Data* or *Print Active Tab*.

4.1.0 Print Preview
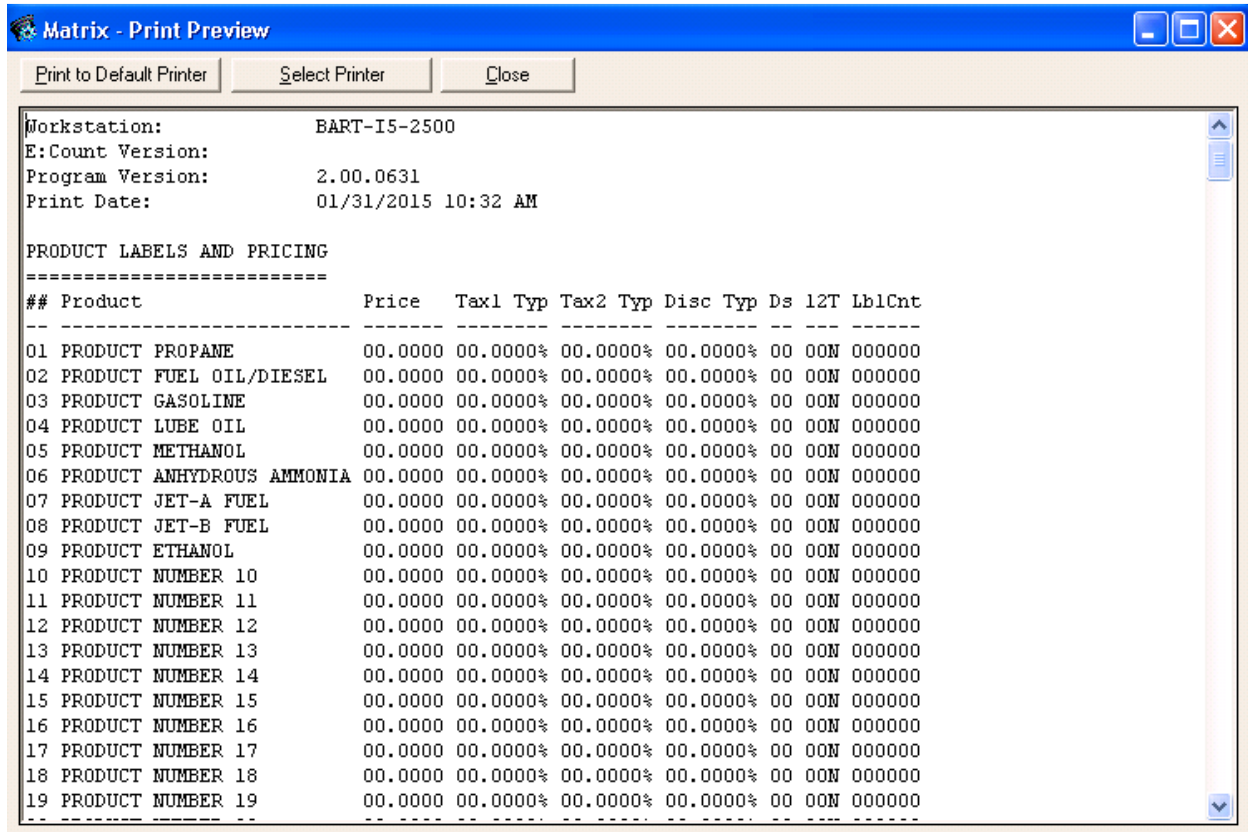
Figure 24. Print Preview

Print to Default Printer : Print the Settings to the Default
                           Windows Printer.
Select Printer ....: Display the Printer Select dialog.
Close ....: Close the Print Preview Screen and
                           return to the Matrix main screen.

5.0.0 E:Count Reference
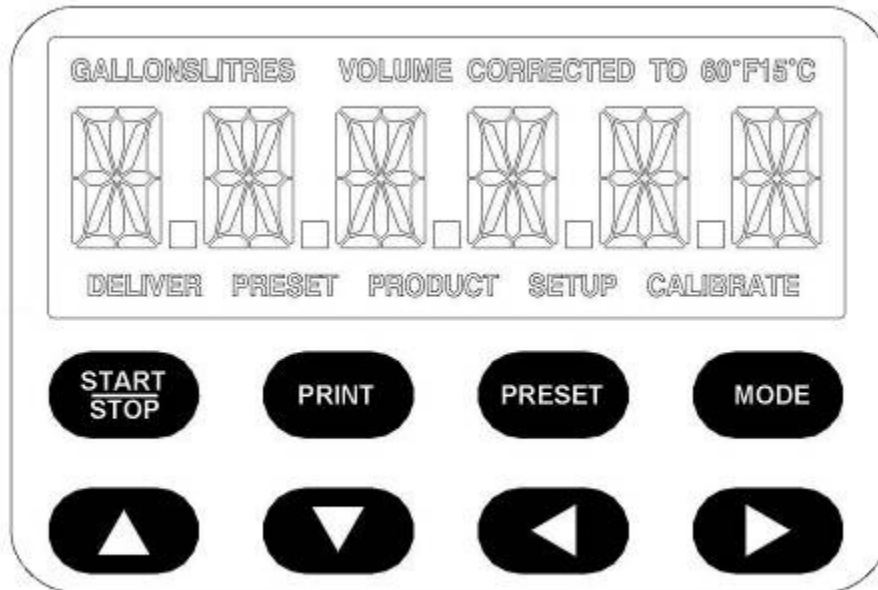
Figure 25.   E:Count LCD and Keyboard Layout

GALLONSLITRES   'GALLONS' or 'LITRES' indicates the
                                 current Volume Mode (US or Metric).

VOLUME CORRECTED TO 60F15C   Displayed whenever the Temperature
                                 Compensation is active. '60F' in
                                 Gallons Mode, 15C' in Liters mode.

DELIVER   Indicates Delivery Mode is active
                                 and will display until the Fuel
                                 Delivery Ticket prints.

PRESET   Indicates the Preset Volume is
                                 being changed.

PRODUCT   Indicates the Product Code is being
                                 changed.

SETUP   Displayed in the Delivery Menu and
                                 the Calibration Menu.

CALIBRATE   Calibration Screw backed out.
                                 Displayed until Calibration Screw
                                 tightened.

<u>Special Note on Keyboard Entry</u>

The E:Count uses special technique called **PRESS & HOLD** for keyboard entry. This technique eases keyboard operation, especially when wearing gloves, in the absence of any audible or tactile feedback. Simply press a button and wait for the desired action.

Examples:
- For menus press & hold the mode key until the selection appears.
    - o PRESS & HOLD **<START/STOP>** to enter that selection.
    - o PRESS & HOLD **<START/STOP>** to exit the selection.
- To enter a number PRESS & HOLD the **<RIGHT>** or **<LEFT>** arrow keys to select the digit to be changed. To change the number PRESS & HOLD the **<UP>** or **<DOWN>** arrow.
- To start a delivery PRESS & HOLD **<START/STOP>**.
- To enter a preset PRESS & HOLD **<PRESET>**.

Pressing and releasing a button may give results but it is only coincidental that the button was held long enough.

6.0.0 Initial Standalone E:Count Settings

The Matrix cannot configure all settings in an E:Count. The following are the minimum recommended values that need to be configured at the E:Count prior to operation or further configuration with the Matrix software.

Step 1. Setup calibration menu values by loosening the Calibration Bolt and then pressing the Mode button. Most of the values will be set in the Matrix software, however the following need to be set at the E:Count:

Calibration Mode:
PRCODE   – Current Product Code
CALFAC   – Calibration Factor
ATOCAL   – Auto-Calibration
MRATIO   – Meter Ratio
CMPTBL   – Compensation Table Number
SERIAL   – Register Serial Number
TIMER   – No Flow Timeout setting
REGNUM   – Register Port Number
U TYPE   – Unit Type, either Mass or Volume
UNITS   – Units, either Gallons or Litres
PGROSS   – Print Gross Volume setting
DECMAL   – Decimal Settings
AIRSEN   – Air Sensor Status
PROBE   – RTD or Analog (RTD replaces Analog as of June 2007)

When finished replace the Calibration Bolt.

Step 2. Setup Delivery menu values by pressing the Mode button. The following need to be set at the E:Count:

DELIVERY MENU
DRIVER   – Driver Number

Press Start/Stop to save the Driver Number and return to Delivery Mode.

Step 3. Enter Setup menu values by pressing the Mode button and
then Start/Stop on SETUP followed by the Security Code. The
following need to be set at the E:Count:

SETUP MENU
NEWCOD   – Note the Existing Security Code
STAGE1   – Stage 1 Shutoff Value
STAGE2   – Stage 2 Dwell Value
SALE   – Next Sale Number
TRUCK   – System Truck Number
CURNCY   – Currency Display setting
PRINTR   – Printer Type
COPIES   – Number of Thermal Printer Copies (if necessary)
HOSEPK   – Enable Hose Packing (if necessary)

Press Start/Stop on Exit to return to Delivery Mode.

Step 4. If the Currency function is enabled, it is not
necessary to enter currency values at the E:Count – the Matrix
software will allow you to edit all Pricing values.

Step 5. The computer needs to be connected to Serial Port 1 (or
the HOST Port) of the Power Control Module when running the
Matrix Program. Run the Matrix and refer to the Matrix User's
Guide for additional Information.

7.0.0 Upgrading E:Count Software and Settings

Step 1. Settings on each of the E:Count menus should be noted before upgrading an E:Count. Use the following worksheet to save those values. The items with an "*" in front of them are items that are able to be loaded through the Matrix program.

DELIVERY MENU
DRIVER   – Driver Number

MONEY MENU (Each value must be recorded for each valid product)
* PRICE – Product Price
* TAX 1 – Tax 1 Rate
* TXTYP1 – Tax 1 Type
* TAX 2 – Tax 2 Rate
* TXTYP2 – Type
* TAXSUB – Subtotal Tax
* DISCNT – Discount Rate
* DSCTYP – Discount Type
* DSCDAY – Discount Days

SETUP MENU
NEWCOD   – Note the Existing Security Code
STAGE1   – Stage 1 Shutoff Value
* STAGE2 – Stage 2 Dwell Value (per product)
SALE   – Next Sale Number
TRUCK   – System Truck Number
CURNCY   – Currency Display setting
PRINTR   – Printer Type
COPIES   – Number of Thermal Printer Copies
HOSEPK   – Enable Hose Packing (if necessary)

CALIBRATION MENU
PRCODE   – Current Product Code
* CALFAC – Calibration Factor
MRATIO   – Meter Ratio
* CMPTBL – Compensation Table Number
SERIAL   – Register Serial Number
TIMER   – No Flow Timeout setting
REGNUM   – Register Port Number
U TYPE   – Unit Type, either Mass or Volume
UNITS   – Units, either Gallons or Litres
PGROSS   – Print Gross Volume setting
DECMAL   – Decimal Settings
AIRSEN   – Air Sensor Status
PROBE   – RTD or Analog (RTD replaces Analog as of June 2007)

Step 2. Replace the chip in the Power Control Module with the PCMx chip provided by MID:COM (x is the version of the PCM software and may change).

Step 3. Hook up the programming wire harness (provided by MID:COM) to the outside 9 pin circular connector on the E:Count register head and the serial port on your laptop. Change the software in the E:Count register head to the current version (provided by MID:COM) by double clicking on the xxxx.BAT file (provided by MID:COM).

Step 4. The computer needs to be hooked to serial port 1 of the Power Control Module when running the Matrix Program. Run the Matrix and refer to the Matrix User's Guide for additional Information.

8.0.0 Import and Export CSV Files

The Matrix has a function that allows the Import and the Export of a comma-delimited text file (CSV) to be used with an external spreadsheet application to update/modify pricing fields (Excel).

REQUIREMENTS

- There are 18 required fields in each record of the CSV File.
- All 18 fields are required for every record.
- The fields within each record must be comma-delimited.
- The fields themselves must contain no commas, neither in the amounts nor the text.
- There are 100 records in the CSV file, 1 Header Record and 99 Product Records.
- All 100 records are required.
- Record #1 is the Header Record; the Header will contain the name of each field in all caps with no spaces.
- The Header record must start with "PRODUCTCODE" and must end with "THISFIXESEXCEL".
- The Product records must start with the number 1-99 in the first field and must end with "DO_NOT_CHANGE" in the last field.
- All text in the file will be converted to upper-case.
- All of the text in the records must be valid printable ASCII characters.
- The records in the file need to be terminated with CRLF characters, these will be the only characters that are not printable but are required to separate records.

The data in each field will be format-checked and range-checked, however it is still possible that errors may happen during the import.

Contact MID:COM for assistance with importing CSV files.

```
Field Name # Records        Format               Tab
-------------------------------------------------------------
PRODUCTCODE          99     2 digits, 01-99       *
DESCRIPTION          99     25 ASCII characters   Product Labels
PRICE                99     00.0000 to 99.9999    Prices
TAX1RATE             99     00.0000 to 99.9999    Prices
TAX1TYPE             99     1 character, % or $   Prices
TAX2RATE             99     00.0000 to 99.9999    Prices
TAX2TYPE             99     1 character, % or $   Prices
DISCOUNTRATE         99     00.0000 to 99.9999    Prices
DISCOUNTTYPE         99     1 character, % or $   Prices
DISCOUNTDAYS         99     2 digits, 00-99       Prices
FEE1INDEX            99     1 digit, 0-9          Prices
FEE2INDEX            99     1 digit, 0-9          Prices
FEESTAXABLE          99     1 character, Y or N   Prices
EXTRALABELSTART      99     3 digits, 000-100     Product Labels
EXTRALABELCOUNT      99     3 digits, 000-100     Product Labels
THISFEEAMOUNT        9**    00.0000 to 99.9999    Special Charge
THISEXTRALABEL       99     25 ASCII characters   Product Labels
THISFIXESEXCEL       99     DO_NOT_CHANGE         ***
```

Figure 26. CSV Import/Export Fields

* The ECount has 99 Product Codes, 01-99. The PRODUCTCODE field is included in the CSV file format in order to clarify which Product Code the fields in that record apply to.

** There are only 9 Fee Amounts available, as a result only the first 9 rows will have an amount in the THISFEEAMOUNT (field #16). Records 10-99 will have "DO NOT USE" in THISFEEAMOUNT. Any values in THISFEEAMOUNT for records 10-99 will be ignored.

*** Excel has a known issue regarding inconsistent behavior when saving CSV files if the last cell in a block of 16 rows is empty. To prevent this there is an 18th field at the end of each record that must not be blank. This field is called "THISFIXESEXCEL" and must contain "DO_NOT_CHANGE" in all product records.

Microsoft Knowledgebase Article ID: 77295
http://support2.microsoft.com/kb/77295/en-us#appliesto

Excel saves text files in 16-row blocks. Therefore, if all the cells in the last column in a 16-row block are empty, Excel saves that area as if the column does not exist. No tabs or commas are saved for that 16-row block.
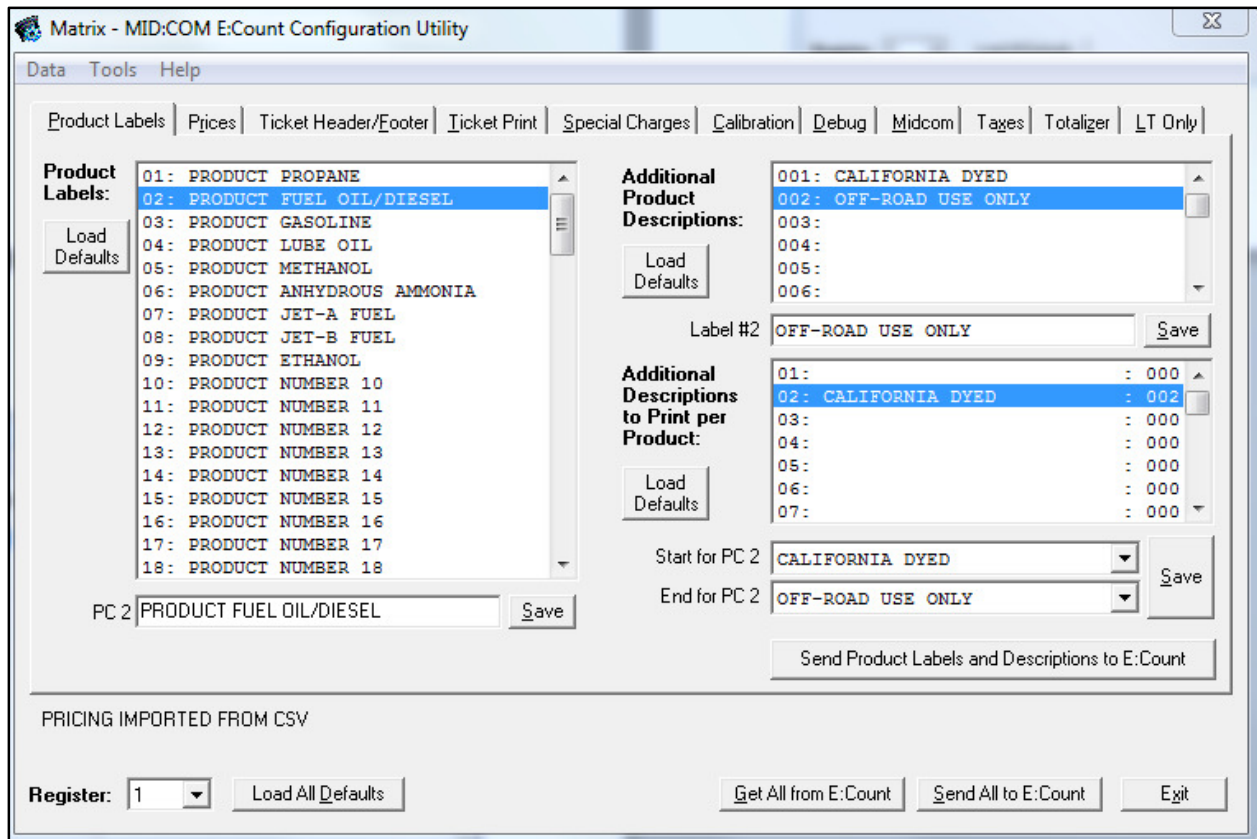
Figure 27. Product Labels Tab for CSV File

DESCRIPTION
25 Characters, Printed on delivery tickets

EXTRALABELSTART
Index from 1-100 of the First Additional Product Description to Print, 0 = no additional product descriptions will print.

EXTRALABELCOUNT
Count of Additional Product Descriptions to print, starting at the First Additional Product Description to Print and counting up. Start Index + Count must be less than or equal to 100.

THISEXTRALABEL
There are 100 Additional Product Description Lines, but only Descriptions 1-99 will be imported or exported. This is done in order to maintain uniform record layouts for all of the Product Records in the CSV file. The 100th Description will be blank after exporting but may be edited directly in the Matrix
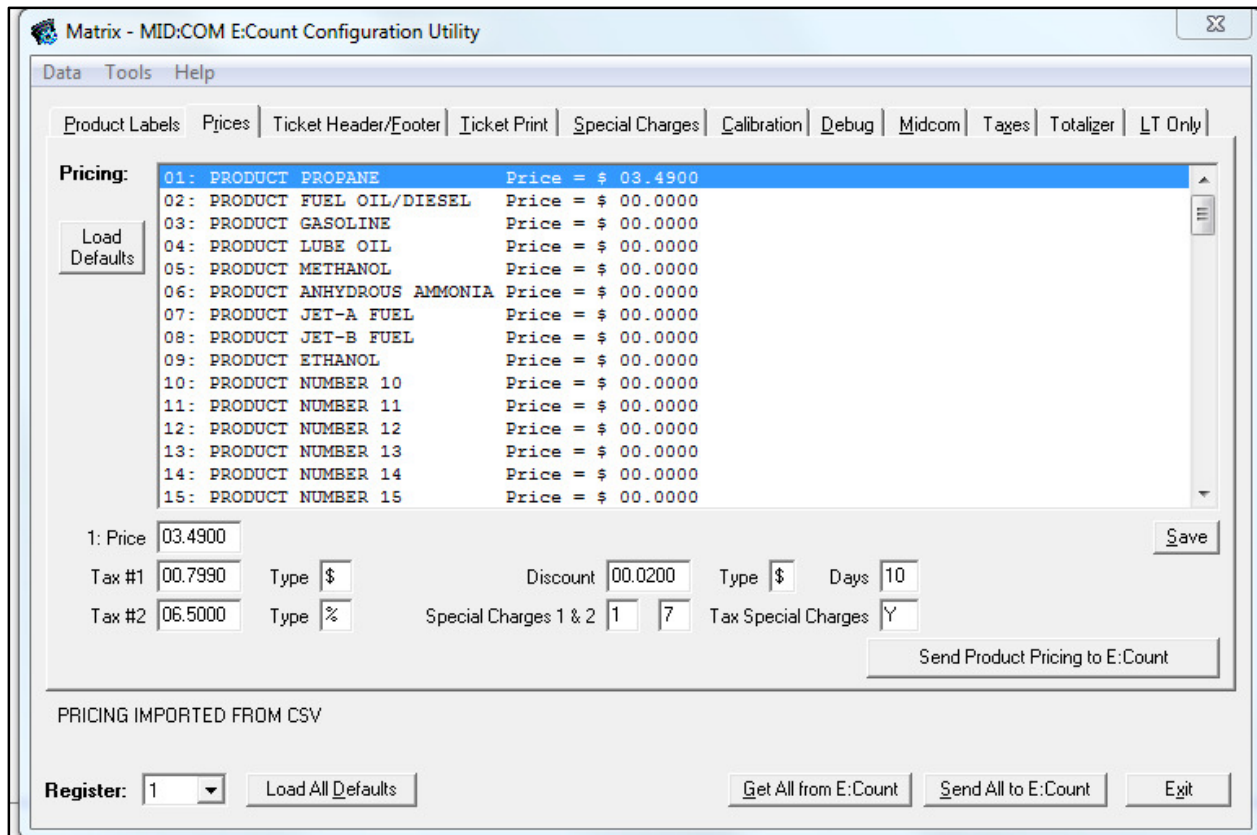
Figure 28. Prices Tab for CSV File

PRICE
Numeric Price per unit Volume/Mass, from 0.0000 to 99.9999.

TAX1RATE, TAX2RATE, DISCOUNTRATE
Numeric Tax/Discount Rate, from 0.0000 to 99.9999.

TAX1TYPE, TAX2TYPE, DISCOUNTTYPE
Sales Tax %, Excise Tax $/unit, or Discount % or $/unit.
Must be $ or %.
07.5000% = 7.5% $100   x 7.5%   = $7.5
07.5000$ = $7.50/unit   100GL   x $7.50 = $750 ***
00.0750% = 0.075% $100   x 0.075% = $0.075 ***
00.0750$ = $0.075/unit   100GL   x $0.075 = $7.50 ***

DISCOUNTDAYS
Number of days to Pay for the Quick Pay Discount, calculated
printed on delivery ticket, must be from 00-99

(continued)

PRICES TAB (continued)

<u>FEE1, FEE2</u>
Index of Fee (or Special Charge) to be added to total cost on
delivery ticket, from 1-9, or 0 if no Fee. Refers to the Special
Charges Tab for the Fee Amount and Fee Description for a
particular Fee. Must be from 0-9.

<u>FEESTAXABLE</u>
Indicates whether or not the fee(s) should have the taxes
applied. Y indicates the Fees are Subject to the same taxes as
the product, while N indicates the Fees are not subject to any
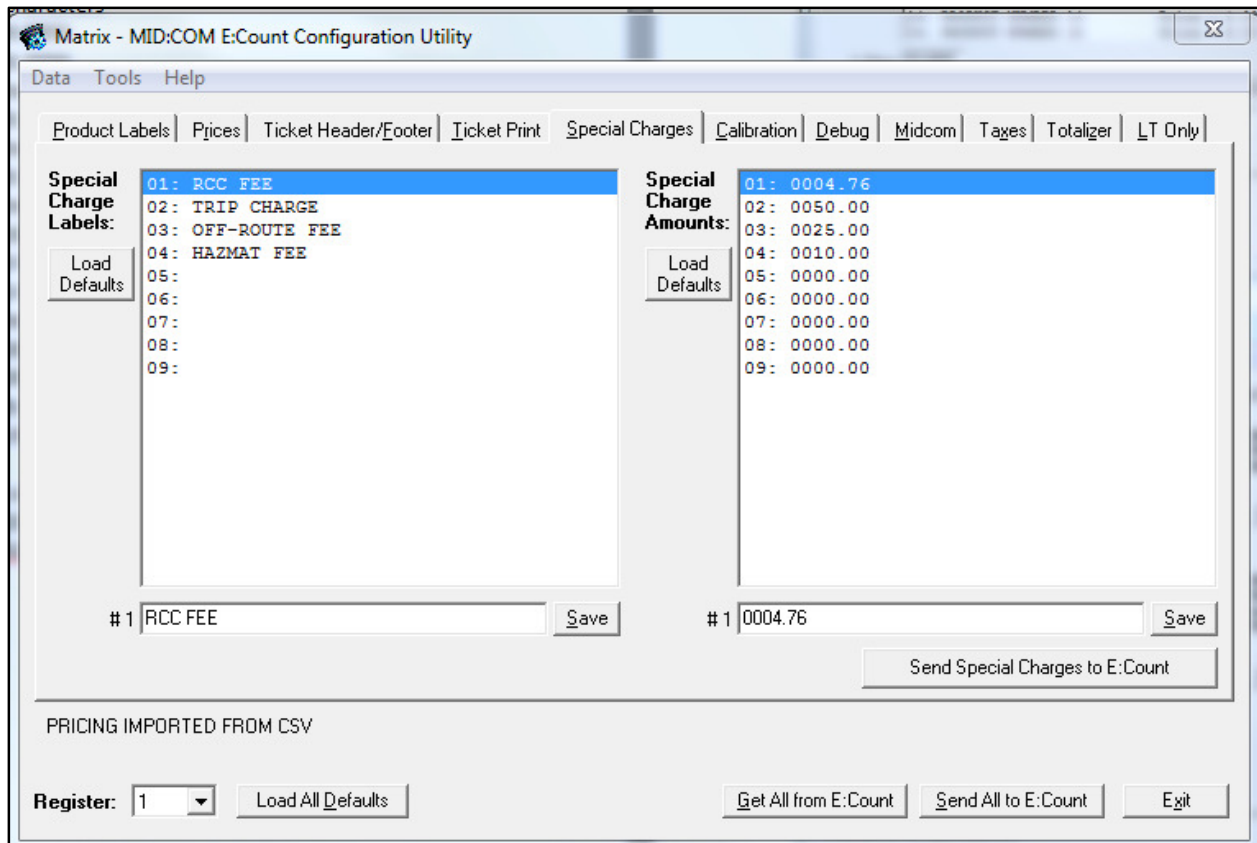tax. Must be a Y or an N.

Figure 29.   Special Charges Tab for CSV File

<u>THISFEEAMOUNT</u>
Fee Amount from $0000.00 (no fee) to $9999.99.
Only the first 9 Fee Amounts (in the first 9 Product Records in the CSV File) will be used. The Fee Amounts in Product Records 10-99 are ignored. "DO NOT USE" is exported in records 10-99.

Figure 30. CSV File in Excel 2010

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PRODUCT(	DESCRIPTI	PRICE	TAX1RATE	TAX1TYPE	TAX2RATE	TAX2TYPE	DISCOUNT	DISCOUNT	DISCOUNT	FEE1INDE)	FEE2INDE)	FEESTAXA	EXTRALAB	EXTRALAB	THISFEEAI	THISEXTRALABEL	
2	1	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	1111.11		
3	2	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
4	3	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
5	4	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
6	5	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
7	6	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
8	7	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
9	8	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
10	9	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	9999.99		
11	10	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	DO NOT USE		

Figure 30.   CSV File in Excel 2010

```
    ---+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0
 1  PRODUCTCODE,DESCRIPTION,PRICE,TAX1RATE,TAX1TYPE,TAX2RATE,TAX2TYPE,DISCOUNTRATE,DISCOUNTTYPE,DISCOUNT
 2  01,PRODUCT PROPANE         ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 3  02,PRODUCT FUEL OIL/DIESEL  ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 4  03,PRODUCT GASOLINE         ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 5  04,PRODUCT LUBE OIL         ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 6  05,PRODUCT METHANOL         ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 7  06,PRODUCT ANHYDROUS AMMONIA,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 8  07,PRODUCT JET-A FUEL       ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
 9  08,PRODUCT JET-B FUEL       ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
10  09,PRODUCT ETHANOL          ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,0000.00,
11  10,PRODUCT NUMBER 10        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
12  11,PRODUCT NUMBER 11        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
13  12,PRODUCT NUMBER 12        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
14  13,PRODUCT NUMBER 13        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
15  14,PRODUCT NUMBER 14        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
16  15,PRODUCT NUMBER 15        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
17  16,PRODUCT NUMBER 16        ,00.0000,00.0000,%,00.0000,%,00.0000,%,00,0,0,N,0,0,DO NOT USE,
```

Figure 31.   CSV File in Text Editor

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PRODUCT	DESCRIP1	PRICE	TAX1RATE	TAX1TYPE	TAX2RATE	TAX2TYPE	DISCOUN	DISCOUN	DISCOUN	FEE1INDE	FEE2INDE	FEESTAX	EXTRALAE	EXTRALAE	THISFEEA	THISEXTRALABEL	
2	1	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
3	2	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
4	3	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
5	4	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
6	5	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
7	6	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
8	7	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
9	8	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
10	9	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	0		
11	10	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	DO NOT USE		
12	11	PRODUCT	0	0	%	0	%	0	%	0	0	0	N	0	0	DO NOT USE		

Figure 32.   CSV File in Excel 2003

INDEX

VERSION HISTORY

Version	Date	Author	Description
1.00	12-05-06	BJS	Document created
1.01	12-07-06	BJS	Added Install Images
1.02	12-12-06	BJS	Updated Index
1.03	12-14-06	BJS	Updated Upgrade and Setup Notes
1.04	12-14-06	BJS	Corrections and Updated Index
1.05	12-15-06	BJS	Corrections
1.06	01-03-07	BJS	Serial Communication Update
1.07	01-03-07	BJS	Serial Communication Update
1.08	09-14-07	BJS	Modified Product Label commands
1.09	10-23-07	BJS	Updated Product Label commands
1.10	04-14-08	BJS	Subtotal Tax, Tax Labels
1.11	01-31-15	BJS	Screens, CSV File, Options, etc..
E180-1.12	09-24-15	BJS	E180, MPC

ECount Matrix Users Guide E180 v1.00.docx