

MID:COM

RoadWarrior *Reference Guide*

Reference Guide for the MID:COM RoadWarrior Computer



Midwest Computer Register, Corp.
1605 170th Street
Hampton, IA 50441

Telephone: 641-456-4848
Fax: 641-456-4600
E-Mail: Sales@MidComCorp.com
Web: www.MidComCorp.com

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Midwest Computer Register, Corp.
1605 170th St.
PO Box 376
Hampton, Iowa 50441, USA
641-456-4848
www.midcomcorp.com
sales@midcomcorp.com

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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.

Email

Sales: sales@midcomcorp.com
Support: <http://www.midcomcorp.com/Contact.html>

Postal Address

MID:COM
1605 170th St
PO Box 376
Hampton, Iowa 50441

Phone Numbers

Phone: 641-456-4848
Fax: 641-456-4600

SECTION 1 - TECHNICAL SPECIFICATIONS

RoadWarrior M1 Specifications

Display

Size: 7" widescreen
Resolution: 800x480
Panel: Anti-glare TFT LCD
Brightness: 450 nits
Contrast Ratio: 500:1
Operating Temp: -20 C to 70 C
Storage Temp: -30 C to 80 C
Response Time: 10 ms
Viewing Angle: 70 degrees
Vibration: 1.5 mm stroke @ 10-55 Hz
Mechanical Shock: 100G 6ms, ±X, ±Y, ±Z

CPU

Processor: Cirrus Logic EP9315 system-on-chip
Core: 200 MHz, 32-bit ARM920T
Bus: 100 MHz
DRAM: 64 MiB synchronous DRAM
Flash: 32 MiB flash RAM
Storage: CompactFlash (CF), Type I/II, 3.3 V or 5 V

Communications/IO Ports

Two USB 2.0 Host ports at low 1.5 Mbps and full 12 Mbps speed
One low/full speed USB 2.0 Function port
Three Serial ports
 Serial 1: RS-232
 Serial 2: RS-232
 Serial 3: RS-422
10/100BT Ethernet, RJ45
CAN 2.0b

Keyboard

52-key Tactile Keyboard, Pushgate® Technology
Internal USB Interface

Audio

AC'97 codec
Internal Stereo 1W speaker

Discrete I/O

Eight general-purpose TTL digital I/Os

Internal Heater

50 W thermostatically controlled

Power

Voltage: +12 VDC nominal

Current: 0.5 A nominal, 4.5 A with heater on (enabled at +5 C)

Environment

Temperature: -30 C to 80 C

Humidity: 0 to 95% non-condensing

Operating System

Windows CE 5.0 codenamed "Macallan" (see Windows CE Timeline)

Latest stable release 5.0 - / July 9, 2004

Embedded

Windows CE Timeline

Source: "A Brief History of Windows CE" (<http://www.hpcfactor.com/support/windowsce/>), HPC:Factor, retrieved May 21, 2007

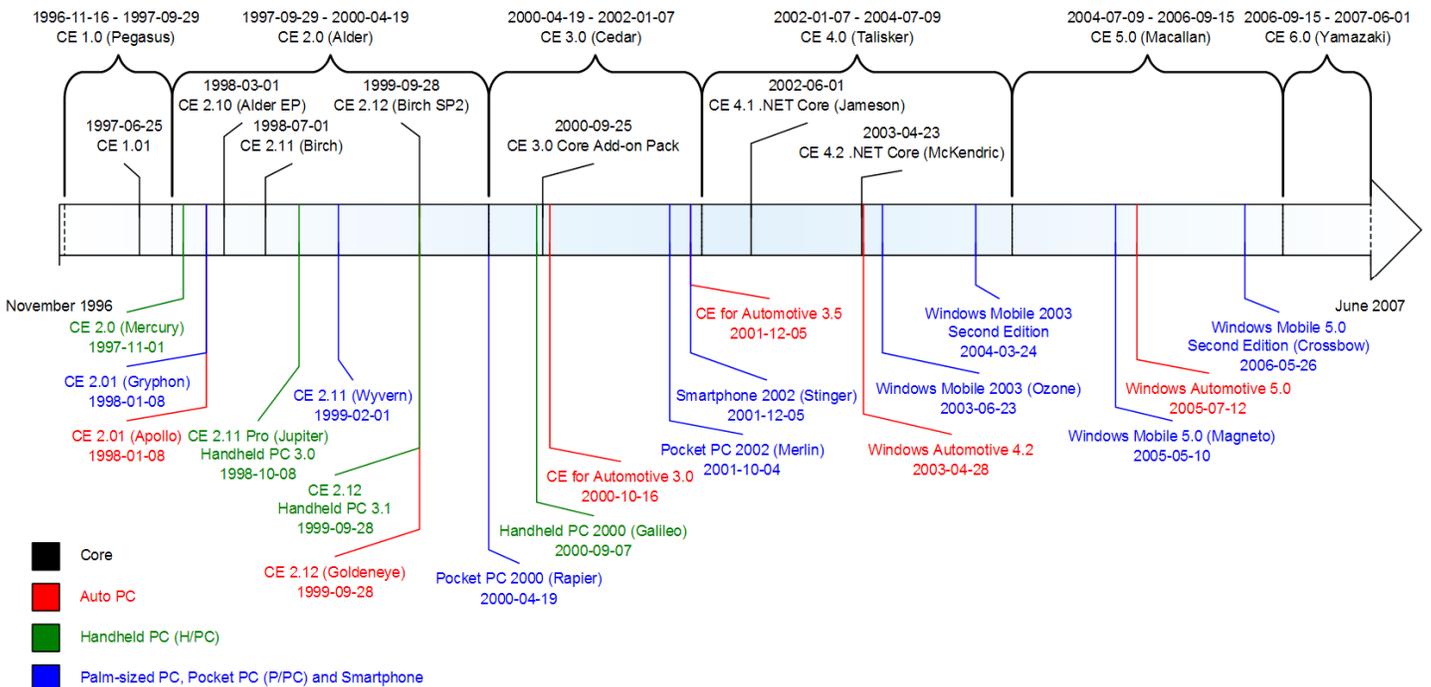


Figure 1. Windows CE Timeline

RoadWarrior M1 Flash Memory Lifecycle

The Intel StrataFlash used in the M1 is rated for 100,000 erase cycles per block.

The "Flash FX Disk" file system driver used on Windows CE systems rotates through all available flash memory when writing files ("load leveling"), so all available flash wears evenly. The driver uses some of the available flash to manage the file system and load-leveling functions.

Flash blocks are 128 kiB in size, and the file system cluster size is 1024 bytes. With this information, you can compute how long the flash memory will be expected to last.

E.g.: An application wants to write a 29.2 kiB block of data to the flash disk once every minute. If the flash disk occupies 12 MiB of the flash disk, how long can the flash be expected to work reliably?

You would calculate as follows: The file will take 30 kiB of disk space, which means that you will be able to write about 4.25 such files in every block of flash ($128/30=4.266$). Assuming 90% storage efficiency of the flash disk driver, there are about 86 blocks of flash available for the data ($90\%*12\text{MiB}/128\text{kiB}=86.4$), so you can reliably perform about 36.5 million copies of the data ($4.25 \times 86 \times 100,000$).

This would allow the data to be updated every thirty seconds for about 35 years.

Note: We take into account any reductions in flash memory that will occur from file growth on the flash disk. For longest service life of the flash memory we limit runtime application files from growing beyond a predetermined size.

E:Count PCM Modifications for use with GPS Receivers

In order to use a GPS receiver with a PCM the must have been modified and should start with serial number EB1800. Anything below that will have to be replaced in order to use GPS. Also since the wiring of the d-sub for the GPS is different between the PCM (pins 1,2,3 and 5) and the 8000 (pins 2,3,4,5) computer there is a new GPS kit number for the PCM's which is 708-0089.

SECTION 2 - INITIAL SETUP

Hardware Setup

Verify the Serial Cable to the Register (E:Count PCM) is connected to COM2 on the right-side of the RoadWarrior.

Settings

- Set the **Driver Name** and **Driver Number**
- Set the **Time** and the **Date**. It may be necessary to reset the time after setting the Date based on Daylight Savings.
- Set the **Truck Number**
- Set the **Plant Number**
- Select the specific **Register Type** (E:Count Registers) installed on the vehicle, Single or Dual E:Counts
- SD File Options:
 - **SD Additional Data** - If your back office software populates additional fields enable this setting.
 - **SD Account # Length** - Length of the Account Number
 - **SD Product Code Length** - Length of the Product Code
 - **SD Preset Format** - Decimal places of Preset Fields
 - **SD TaxFile Rates** - Decimal places of Tax Rates
- E:Count Ticket Configuration via the Matrix for use with a RoadWarrior computer:
 - Midcom Impact = Remove Blank Lines
 - All Other Printers = Use Defaults (Print spacing lines and turn all lines on)
 - If using a MID:COM impact printer, the RW will automatically suppress spacing lines it would normally print. After printing an exemplar ticket, the Matrix can be used to customize the lines if more need to be removed to fit on pre-printed tickets.
 - When using a header and/or a footer there is no need to put blank lines ***in*** the header or the footer - the RoadWarrior will handle that (unless the blank lines should also print on Pump & Print tickets).

Data Files

Only one types of files may be used with the RoadWarrior v2:

1. SD Files: In order to maintain compatibility with companies using MID:COM 8000 computers with SD Cards, the same files used by the MID:COM 8000 are required by the RoadWarrior.

SD File on the USB Flash Drive

1. The SD File will be read directly by the RoadWarrior
2. When sending an SD data file to a RoadWarrior, only 1 file may be loaded on the USB Flash Drive at a time.
3. The USB Flash Drive with the SD File must be inserted into the RoadWarrior at all times while the unit is in operation in SD File Mode.
4. The SD File must have the correct # of bytes for an SD File.
5. The SD File Header Record must start with an 'M' character.
6. If the SD File uses an external tax file, the SD Tax File must already be imported (see Utilities - SD File Utilities for more information). If an external tax code is detected and there is no SD Tax File loaded no tax bill be applied to the transaction.

The USB Flash Drive SD File will be verified a) every time the RoadWarrior is started, and b) roughly every 5 seconds while the Main Menu is displayed. It may take up to 20 seconds (or more) depending on the capacity of the flash drive being used reflect a drive insertion or removal.

A valid SD File is required before any SD File operations will rung, any relevant error messages will be displayed on the screen each time any button is pressed on the Main Menu.

If the USB Flash Drive is removed after the RoadWarrior is no longer displaying the Main Menu, the RoadWarrior will not be able to read data nor will it update transaction records.

SD Files - Operation with No Flash Drive

If no data capture is to be performed, all deliveries will be done to a "Blank Account" built into the RoadWarrior.

SD Tax Code File

If an SD Tax File is to be used, the SD Tax File must be pre-loaded into the RoadWarrior. This is required before customer data will be able to use the Tax Codes.

This following process will copy the SD Tax Code File to the RoadWarrior Hard Drive. The SD Tax Code File will stay on the RoadWarrior to be used with every SD Data File until the SD Tax Code File is deleted or replaced.

Import SD Tax Code File

1. Delete all files off of the USB Flash Drive
2. Copy the SD Tax Code File onto USB Flash Drive - the SD Tax Code File must be the only file on the Drive
3. Insert the USB Flash Drive into one of the built-in RoadWarrior USB Slots (or the RoadWarrior USB External Cable if it is installed)
4. From the RoadWarrior Main Menu:
 - a. Select "U Utilities"
 - b. Select "F3 SD File Utilities"
 - c. Select "F3 Import SD Tax File"
5. The import takes ~30 seconds
6. When the Import is complete select "DEL Main Menu" to return to the Main Menu
7. Remove the USB Flash Drive

Install RoadWarrior Update Package

Version 1 of the RoadWarrior required the use of office software to convert data files. This software also contained all files necessary to update the RoadWarrior.

Version 2 of the RoadWarrior has no office software. In order to obtain the last RoadWarrior update package contact Midcom directly. You will be sent a link to download a file from the Midcom Website. This will contain all files necessary to update the RoadWarrior.

1. Import all transaction files from all RoadWarriors.
2. Create a RW Program Update Flash Drive:
 - a. Insert a USB Flash Drive (labeled RW Program Update) into the desktop computer.
 - b. Download the RoadWarrior Update Package v 2.nn.nn.nnnn from the Midcom website using the link provided, and save it to your desktop.
 - c. Open the zip file, and then double-click on the folder in the zip file. Once a list of files is shown, 'Extract all files' from the .ZIP file to the root folder of the flash drive. **NOTE: All files must be in the ROOT folder of a USB Flash Drive, not in a sub-folder.**
3. Update the RoadWarrior Program on Each RoadWarrior:
 - a. It is recommended that a single person perform the updates.
 - b. For each truck the person updating the trucks should have:
 - i. A printed copy of these instructions
 - ii. An RW Program Update Flash Drive
4. To Update the RW on each truck:
 - a. Remove all USB Flash Drives from the RoadWarrior.
 - b. Insert the RW Program Update Flash Drive into a USB port.
 - c. On the Main Menu select:
 - i. Utilities,
 - ii. Application Utilities,
 - iii. Update Application from Flash.
 - d. When prompted enter the Current Setup Code.
 - i. The default Setup Code is 000000 (six zeroes).
 - e. After rebooting it may be necessary to enter the RoadWarrior Serial Number, it is located on a permanent label near the connectors on the right-hand side of the RoadWarrior.
 - f. The Update process may take several minutes. After the update is complete the Main Menu will be shown.
 - g. Remove the RW Program Update Flash Drive.

SECTION 3 - OPERATION

Main Menu

Caps **04/05/2011** **8:32 AM** **Truck:5432** **Driver:5678**

== ROADWARRIOR MAIN MENU ==

- =====
- F1 Print Shift Reports**
 - F2 Load Product**
 - F3 Deliver to Next Blank Record**
 - F4 Dispatch Reports**
 - F5 Scan All Accounts**
 - F6 Find Account**

Press Key for Desired Option

Flash: Ready

v 2.3.34.417					
				S Setup	U Utilities

- | | |
|------------------------|--|
| F1 Print Shift Reports | Print Shift Reports for all E:Counts |
| F2 Load Product | Load Product and Save to SD File |
| F3 Deliver to Blank | Deliver to next Blank Account record |
| F4 Dispatch Reports | Search for Accounts based on delivery Criteria |
| F5 Scan All Accounts | Specify a Record Number in the SD File to Display |
| F6 Find Account | Find an Account using the Account #, Name, Address, Comment, or Tank # |
| S Setup | Display the "Setup" screen |
| U Utilities | Display the "Utility" menus |

Note: The availability of screens and functions will be dependent on:

- a. the version of the RoadWarrior program and,
- b. the RoadWarrior Options you have purchased, and
- c. the presence or absence of a Flash Drive with a valid SD file

Daily Process to Load New Data

1. Delete all files off of USB Flash Drive
2. Copy SD Data File onto USB Flash Drive - must be the only file on Drive
3. Insert USB Flash Drive into a RW USB slot
4. Turn the ignition on - after a delay to allow the vehicle power to stabilize the RW will turn on.
5. If an SD Data File data file is found on the USB Flash Drive while the RW is booting the RW will display the full Main Menu and allow all account functions to operate.

NOTE: The USB Flash Drive with an SD file must remain in the RW all day as deliveries are written to the SD File as they happen.

Finding an Account

Select an Account from the "Main Menu"

"F3 Deliver to Blank"	Deliver to Blank Account (see below)
"F4 Dispatch"	List Accounts with a Preset
"F5 Scan Acct"	Load Account by SD File Record Number
"F6 Find Acct"	Find First Matching Account (see below)

Deliver to Next Blank Account Record

If not using an SD File, all deliveries will be performed to a built-in blank account. Each time the delivery data is changed it will be saved to this record for display during the next delivery, as well as any settings from the RoadWarrior setup. It is possible to load an SD tax file to be used with the built-in blank SD File.

If an SD File on the Flash Drive is being used, this option will find the first available Blank Account record and prepare it for a delivery. All fields will be initialized using the data from the record as well as any settings from the RoadWarrior setup.

Find a Specific Account

One field may be used to search for an Account. Starting from the top of the "Find Account" screen the first non-blank field will be used to search the database and list the Accounts matching the specified criteria.

The search will be performed until an account is found that matches the search criteria. The first matching account will automatically be selected and displayed.

The Account Number field is the fastest way to find an account. Any other field used to search will be substantially slower as the RoadWarrior will look through the text fields for the first matching record.

The "Search Option" setting

- S = Records must have the searched criteria at the beginning of the target field.
- A = Records must have the searched criteria anywhere within the target field. The 'A' "Search Option" setting allows any portion of the desired field to be searched.

RoadWarrior Navigation and Directions Using Garmin Devices

PND = Portable navigation Device
FMI = Garmin Fleet management Interface

The MID:COM RoadWarrior Garmin PND Navigation software must be licensed for each RoadWarrior. The License is specific to each individual RoadWarrior by the RW Serial Number.

The license will be embedded into the application and may not be transferred to another RoadWarrior.

It will be necessary to update and configure the RoadWarrior application on each computer to use the RoadWarrior Garmin PND Navigation software license.

MID:COM neither sells nor supports the Garmin PND devices themselves - they are available through both online and retail vendors. There are dozens of devices and many of them are supported. We have only tested a few models. A PND firmware update may be required in order for a supported device to work.

Each model requires a specific Garmin FMI (Fleet Management Interface) cable to communicate with the RoadWarrior.

The various models of Garmin PND devices available are listed on the following pages.

The table below lists the Garmin PND models and cables that have been tested and confirmed to work:

Tested PND Models

Garmin PND	Garmin Cable#	MID:COM Kit includes Software License and Finished Cable Part#	Tested/Supported
Nuvi 1390T	010-00628-00	708-0105	Y/Y
Nuvi 1490LMT	010-00628-00	708-0105	Y/Y
Nuvi 2350LT	010-00628-00	708-0105	Y/Y
Nuvi 265WT	010-11232-00 +	708-0094	Y/Y
Nuvi 265WT	010-11259-00*+	708-0095	Y/Y
Nuvi 765W	010-10865-00 +	708-0096	Y/Y
Nuvi 650	010-10865-00 +	708-0096	Y/Y
Zumo 660	010-10865-00 +	708-0096	Y/Y
Nuvi 1300 ¹	010-11232-00	708-0094	Y/Y
Nuvi 200	n/a: This model does not support the Garmin FMI		Y/N

PND Cable Part Numbers

Garmin Cable#	MID:COM Kit includes Software License and Finished Cable Part#	MID:COM Replacement Cable Part#
010-00628-00	708-0105	702-0112
010-11232-00 +	708-0094	702-0097
010-11259-00*+	708-0095	702-0098
010-10865-00 +	708-0096	702-0099
010-10813-00 +	708-0097	702-0100

* This cable is optional for these devices, it supports simultaneous Lifetime Traffic for North America as well as FMI Data capability. The 010-11232-00 cable (Midcom Part # 708-0094) is the default cable.

+ These cables are GPS device are no longer available for purchase.

Install the PND

- Connect the PND Power connector to the +12VDC port on the PCM
- Connect the PND RS-232 connector to the COM1 port (the 'lower' port) of the RoadWarrior.
- Insert the PND cable into the PND cradle before securing the PND into the cradle.
 - o There are many models of Garmin PNDs - some models have the cable plug into the cradle and some models have the cable plug directly into the PND.
 - o **Do not install the PND into its mount until all cables are in place.**
 - o **Pull the PND out of its mount before you disconnect any cables.**
 - o **If you follow these two rules, you will not damage the com port on the PND. Failure to follow these instructions will damage the com port of the Nüvis that use the 010-10865-00 cable with the 18 pin connector.**
- Secure the PND into the cradle
- Secure the cradle to the windshield or the dash as desired.

Configure the RW

- On the Main Menu of the RW select "S SETUP" on the RW.
- Select "PAGEUP" or "PAGEDOWN" until the GPS Settings screen is shown on the RW.
- Press F1 to select "GPS Type" on the RW.
- You will be prompted for the current Security Code - enter all 6 digits and select "F6 SAVE".
- Press F2 to select "P - GARMIN PND ON COM1" on the RW.
- The "GPS Port" setting should automatically be set to "1"(COM1).
- To exit the Setup screen select "DEL Main" on the RW.

Test the PND

Note: The PND test may be performed even if the end-user has not purchased a "RoadWarrior PND License" for a particular RoadWarrior Serial Number.

- On the Main Menu of the RW select "**S SETUP**" on the RW.
- Select "**T TESTS**" on the RW.
- Select "**Q TEST GPS/PND**" on the RW.
- Select "**F6 START**" on the RW.
- The test will take from 30-60 seconds and the PND responses to each will be shown on the RW screen.
- When it receives a new stop, the PND should display:
 - o a "**RED FLAG**" or "**BLUE FLAG**" or a "**New Stop**" indicator in one of the corners of the screen
 - o The PND will also play a "**ding-ding**" sound the driver needs to acknowledge the new stop.
- Press the "**RED FLAG**" or the "**BLUE FLAG**" on the PND.
- Press the **LOCATION** to *activate* the stop on the PND.
- Press "**GO**" or Top Left "**MENU BOX**" and then "**GO**" (2350LT) on the PND.
 - o A random destination will be used, which may be anywhere from 2.5 to over 1000 miles away.
 - o THE PND will provide voice prompts to the operator to the destination.
- To finish the test select "**F1 MAIN**" on the RW, and "**BACK**" on the PND.

Get Directions to an Account

To use a Garmin PND to get directions:

1. There must be a customer data file loaded, and
 2. There must be at least one account that has a valid Latitude and Longitude, and
 3. A "RoadWarrior PND License" must have been purchased from MID:COM for each RoadWarrior. The License is unique to a RoadWarrior Serial Number and is hard coded into the application.
- On the Account Information screen verify that **"GPS: OK"** is displayed on the RW.
 - Select **"D GPS NAV"** on the RW.
 - o The RW PND Status screen will be shown while the RW is communicating with the PND.
 - When it receives a new stop, the PND should display:
 - o a **"RED FLAG"** or **"BLUE FLAG"** or a **"New Stop"** indicator in one of the corners of the screen
 - o The PND will also play a **"ding-ding"** sound the driver needs to acknowledge the new stop.
 - Press the **"RED FLAG"** or the **"BLUE FLAG"** on the PND.
 - Press the **LOCATION** to **activate** the stop on the PND.
 - Press **"GO"** or **Top Left "MENU BOX" and then "GO"** (2350LT) on the PND.
 - o THE PND will provide voice prompts to the operator to the destination.

Making a Delivery

The Delivery Process using the RoadWarrior is comprised of several steps. The specific steps of a particular system will vary depending on the selected options and files in use. The following should only be used for reference.

Delivery Process

1. Select the Delivery Account
2. Enter the Pre-Delivery Data
3. Delivery Initialization
4. Deliver Product
5. Finish the Delivery
6. Enter the Post-Delivery Data
7. Print the Meter Ticket with Delivery Information

The following pages will explain the delivery steps in detail.

Step 1 - Select the Delivery Account

Use the "Find Account" screen to select the particular account for the delivery.

On the "Account Information" Primary screen (the first screen displayed when an Account is selected), selecting the "F6 Deliver" button will display the "Pre-Delivery Screen".

Step 2 - Enter "Pre-Delivery" data

Screens 1-4 allow the operator to set Pricing, Product, Taxes, Discounts and Fees. The No Flow Timer may be temporarily disabled for the following delivery.

Prior to selecting "F6 Deliver" on the "Pre-Delivery" screen, the meter ticket printer should be ready for the delivery. The printer must have paper - either a meter ticket must be inserted into a slip printer (the Epson 295 or the MidCom SLP-100 Printer) or the thermal roll printer must have sufficient paper remaining on the roll. Additionally, if using a roll printer the printer cover must be closed.

If "F6 Deliver" on the "Pre-Delivery" screen is pressed without a ticket (or if the printer is not ready) the RoadWarrior will display the "Delivery" screen and the warning message:

Check E:Count Printer Paper/Ticket

Note: To begin the delivery from the "Delivery" screen the operator must insert the ticket (or additional paper) and press "F4 Start".

No-Flow Timer

The Setup Screens contain a setting for the No Flow Timeout including 'always enabled', 'always disabled', or 'enabled but allow the driver to override' for a single delivery.

To override for a single delivery, the driver selects the 'T TIMER' button on the pre-delivery screen, and then selects "DISABLE = Multiple Tank Delivery". When the No Flow Timer is disabled the TIMER caption display an asterisk: T TIMER*".

(continued)

These settings only override the No-Flow Timer if it is enabled in the Register, **if the No Flow Timer in the Register is Off (or Disabled) then 1) the Timer setting in the RoadWarrior has no effect, 2) the Register No Flow Timer will never fire, and 3) no message about the timer will be printed.**

Note: If the 'always disable timer' is selected, or on any delivery where the timer is manually disabled, the E:Count will print "Multiple Tank Delivery" on the meter ticket as per the Weights & Measures requirements.

Step 3 - Delivery Initialization

After the RoadWarrior has determined that the Electronic Register and the Meter Ticket Printer are ready to begin the delivery, the register will reset and the "Delivery" screen will be displayed.

This initialization process may take from 10-30 seconds depending on the type of register, version of register software, and specific options for the delivery.

When the "Delivery" screen shows "Valves Open" the operator should exit the cab and begin the delivery. The delivery initialization is complete, the register has been reset successfully, and the differential valves are now open.

Step 4 - Deliver Product

While product is being delivered the RoadWarrior will display relevant delivery information on the screen, including but not limited to the following:

- Current Delivery Volume
- Remaining Preset Volume
- Register Product Number
- Register Product Price
- Valve Status (Open or Closed)
- Delivery Duration / Flow Rate

The delivery information will be updated several times per second and will remain on the "Delivery" screen as long as the delivery is active.

Step 5 - Finish the Delivery

There are multiple methods for the delivery to be finished:

RoadWarrior Print Button Pressed During Delivery

No Flow Timer Expires During Delivery

Remote Print Button Pressed on Register During Delivery

Each of these events will cause the register delivery to end, and the RoadWarrior will display the "Post-Delivery" screen.

Ending the delivery will finalize the delivery data including the Delivery End Time, Delivery Totalizers, and Volumes.

Step 6 - Enter the Post-Delivery Data

On the "Post-Delivery" screen the required fields will be marked with several 'plus' (+++) characters. These fields must be entered before the meter ticket will be printed.

Prior to selecting "F6 Print" on the "Post-Delivery" screen, the meter ticket printer should be ready for the delivery. The printer must have paper - either a meter ticket must be inserted into a slip printer (the Epson 295 or the MidCom SLP-100 Printer) or the thermal roll printer must have sufficient paper remaining on the roll. Additionally, if using a roll printer the printer cover must be closed.

If "F6 Print" on the "Post-Delivery" screen is pressed without a ticket (or if the printer is not ready) the RoadWarrior will redisplay the "Post-Delivery" screen and this error:

Check E:Count Printer Paper/Ticket

Note: To print the delivery the operator must insert the ticket (or additional paper) and press "F6 Print".

Step 7 - Print the Meter Ticket with Delivery Information

When all of the required Post-Delivery data has been entered, select "F6 Print" to transmit the Header, Invoice, and Footer information to the Register.

The Register will be commanded to print the Meter Ticket, and the Delivery Information will be included on the ticket.

If using a Thermal Printer, the register setting for "Number Ticket Copies" (refer to the configuration manual for the specific model of register) will control how many copies of the Delivery Ticket will print.

Each Meter Ticket will contain the delivery data including:

- Meter Ticket Header
- Account Information
- Weights and Measures Meter Ticket
- Pricing, Taxes, and Fees
- Total Cost
- Discounts
- Percent Full
- Payments
- Meter Ticket Footer

Printing the Shift Report

The beginning volume for the Shift is always 0. The total volume delivered since the last Shift Report was printed for each product will print on the Shift Ticket.

To print the E:Count Shift Report on the E:Count (using the buttons on the E:Count):

1. Insert a ticket in to the printer (if required).
2. Press and hold <MODE> until SHIFT is displayed.
3. Press <START/STOP> .. the E:Count shift Ticket will print.

To print the E:Count Shift Report from the RoadWarrior (this prints the same report the E:Count prints):

1. Insert a ticket in to the printer (if required).
2. On the Main Menu of the RoadWarrior select "F1 Shift Reports".
3. Insert another ticket in to the printer (if required).

SECTION 4 - TAXES

Taxes Based on Volume

Price is reduced before any taxes are applied
Based on % of Product Cost, or \$ per Gallon
Discounted product cost prints on ticket
% Price Discount calculated on Product Cost
\$ Price Discount calculated on delivered volume

Taxes Based on Cost

Based on % of Product Cost, or \$ per Gallon
Quick Pay Discount is calculated and printed at bottom of
delivery ticket
Both savings and new total to pay are printed
% Quick Pay Discount calculated on Product Cost (or Discounted
Product Cost if already reduced by price discount)
\$ Quick Pay Discount calculated on delivered volume (price
discounts have no effect)

Subtotal Taxes

SECTION 5 - DISCOUNTS

Price Discount

Price is reduced before any taxes are applied
Based on % of Product Cost, or \$ per Gallon
Discounted product cost prints on ticket
% Price Discount calculated on Product Cost
\$ Price Discount calculated on delivered volume

Quick Pay Discount

Based on % of Product Cost, or \$ per Gallon
Quick Pay Discount is calculated and printed at bottom of
delivery ticket
Both savings and new total to pay are printed
% Quick Pay Discount calculated on Product Cost (or Discounted
Product Cost if already reduced by price discount)
\$ Quick Pay Discount calculated on delivered volume (price
discounts have no effect)

Quick Pay Discounts do not give "Tax Back" - they are based on
the Product Cost (or Discounted Product Cost) prior to any
taxes.

If the desired application needs to give "Tax Back", contact
MID:COM for information regarding custom programming.

Examples of the various combinations of discounts and taxes
follow.

Discount Example 1: Price Discount %

Volume:	325.4	Gallons
Price:	3.129	\$/Gallon
Tax 1:	5.5	%
Tax 2:	0.064	\$/Gallon
Tax 3:	0.25	%
Price Discount:	3.0	%

Calculations:

Product Cost:	\$1018.18	
Price Discount:	\$ 30.55	3.0% (0.03 * 1018.18)
Disc Product Cost:	\$ 987.63	
Tax 1:	\$ 54.32	5.5% Sales Tax
Tax 2:	\$ 20.83	0.064 \$/GL Excise tax
Tax 3:	\$ 2.47	0.25% Sales tax
Total Cost:	\$1065.25	

Discount Example 2: Price Discount \$/Volume

Volume:	184.6	Gallons
Price:	2.4799	\$/Gallon
Tax 1:	6.25	%
Tax 2:	0.05	\$/Gallon
Tax 3:	1.8752	%
Price Discount:	0.04	\$/Gallon

Calculations:

Product Cost:	\$ 457.79	
Price Discount:	\$ 7.38	0.04 \$/Gallon (0.04 * 184.6)
Disc Product Cost:	\$ 450.41	
Tax 1:	\$ 28.15	6.25% Sales Tax
Tax 2:	\$ 9.23	0.05 \$/GL Excise tax
Tax 3:	\$ 8.45	1.8752% Sales tax
Total Cost:	\$ 496.24	

Discount Example 3: Quick Pay Discount % - No Tax Back

Volume:	325.4	Gallons
Price:	3.129	\$/Gallon
Tax 1:	5.5	%
Tax 2:	0.064	\$/Gallon
Tax 3:	0.25	%
Quick Pay Disc:	3.0	%

Calculations:

Product Cost:	\$1018.18	
Tax 1:	\$ 56.00	5.5% Sales Tax
Tax 2:	\$ 20.83	0.064 \$/GL Excise tax
Tax 3:	\$ 2.55	0.25% Sales tax
Total Cost:	\$1097.56	
Quick Pay Disc:	\$ 30.55	3.0% (0.03 * 1018.18)
Pay After QPD:	\$1067.01	

Discount Example 4: Quick Pay Discount \$/Volume - No Tax Back

Volume:	184.6	Gallons
Price:	2.4799	\$/Gallon
Tax 1:	6.25	%
Tax 2:	0.05	\$/Gallon
Tax 3:	1.8752	%
Quick Pay Discount:	0.04	\$/Gallon

Calculations:

Product Cost:	\$ 457.79	
Tax 1:	\$ 28.61	6.25% Sales Tax
Tax 2:	\$ 9.23	0.05 \$/GL Excise tax
Tax 3:	\$ 8.58	1.8752% Sales tax
Total Cost:	\$ 504.21	
Quick Pay Disc:	\$ 7.38	0.04 \$/GL (0.04 * 184.6)
Pay After QPD:	\$ 496.83	

Discount Example 5: Quick Pay Discount %, Price Discount % - No Tax Back

Volume:	325.4	Gallons
Price:	3.129	\$/Gallon
Tax 1:	5.5	%
Tax 2:	0.064	\$/Gallon
Tax 3:	0.25	%
Price Discount:	4.1875	%
Quick Pay Disc:	3.0	%

Calculations:

Product Cost:	\$1018.18	
Price Discount:	\$ 42.64	4.1875% (0.041875 * 1018.18)
Disc Product Cost:	\$ 975.54	
Tax 1:	\$ 53.65	5.5% Sales Tax
Tax 2:	\$ 20.83	0.064 \$/GL Excise tax
Tax 3:	\$ 2.44	0.25% Sales tax
Total Cost:	\$1052.46	
Quick Pay Disc:	\$ 29.27	3.0% (0.03 * 975.54)
Pay After QPD:	\$1023.19	

Discount Example 6: Quick Pay Discount %, Price Discount \$ - No Tax Back

Volume:	184.6	Gallons
Price:	2.4799	\$/Gallon
Tax 1:	6.25	%
Tax 2:	0.05	\$/Gallon
Tax 3:	1.8752	%
Price Discount:	0.0299	\$/Gallon
Quick Pay Discount:	4.0	%

Calculations:

Product Cost:	\$ 457.79	
Price Discount:	\$ 5.52	0.0299 \$/GL (0.0299 * 184.6)
Disc Product Cost:	\$ 452.27	
Tax 1:	\$ 28.27	6.25% Sales Tax
Tax 2:	\$ 9.23	0.05 \$/GL Excise tax
Tax 3:	\$ 8.48	1.8752% Sales tax
Total Cost:	\$ 498.25	
Quick Pay Disc:	\$ 18.09	4.0% (0.04 * 452.27)
Pay After QPD:	\$ 480.16	

Discount Example 7: Quick Pay Discount \$, Price Discount % - No Tax Back

Volume:	325.4	Gallons
Price:	3.129	\$/Gallon
Tax 1:	5.5	%
Tax 2:	0.064	\$/Gallon
Tax 3:	0.25	%
Price Discount:	4.1875	%
Quick Pay Disc:	0.025	\$/Gallon

Calculations:

Product Cost:	\$1018.18	
Price Discount:	\$ 42.64	4.1875% (0.041875 * 1018.18)
Disc Product Cost:	\$ 975.54	
Tax 1:	\$ 53.65	5.5% Sales Tax
Tax 2:	\$ 20.83	0.064 \$/GL Excise tax
Tax 3:	\$ 2.44	0.25% Sales tax
Total Cost:	\$1052.46	
Quick Pay Disc:	\$ 8.14	0.025 \$/GL (0.025 * 325.4)
Pay After QPD:	\$1044.32	

Discount Example 8: Quick Pay Discount \$, Price Discount \$ - No Tax Back

Volume:	184.6	Gallons
Price:	2.4799	\$/Gallon
Tax 1:	6.25	%
Tax 2:	0.05	\$/Gallon
Tax 3:	1.8752	%
Price Discount:	0.0299	\$/Gallon
Quick Pay Discount:	0.03	\$/Gallon

Calculations:

Product Cost:	\$ 457.79	
Price Discount:	\$ 5.52	0.0299 \$/GL (0.0299 * 184.6)
Disc Product Cost:	\$ 452.27	
Tax 1:	\$ 28.27	6.25% Sales Tax
Tax 2:	\$ 9.23	0.05 \$/GL Excise tax
Tax 3:	\$ 8.48	1.8752% Sales tax
Total Cost:	\$ 498.25	
Quick Pay Disc:	\$ 5.54	0.03 \$/GL (0.03 * 184.6)
Pay After QPD:	\$ 92.71	

SECTION 6 - SETUP MENU

Page 1 of the RoadWarrior Setup Menu contains the settings that the operator is allowed to change without entering the setup code (just as the Delivery Menu of the E:Count allows the values to be changed without entering the E:Count Setup Code).

All subsequent Setup Pages (after Setup Page 1) require the entry of the RoadWarrior Setup Code prior to changing the value of a setting.

The current value of each setting is displayed even if the RoadWarrior Setup Code has not been entered, this is to aid in troubleshooting any setting-based behavior(s).

Each time the Setup Menu is displayed, the current RoadWarrior Setup Code will be displayed on the top of Setup Page 2 as all asterisks - this is intended to hide the actual value of the setup code.

RoadWarrior Setup Code

Just as the MID:COM E:Count requires the entry of a Setup Code in order to change operational settings, so does the RoadWarrior.

Just as the default E:Count Setup Code is '000000', the default RoadWarrior Setup Code is '000000' (six zeroes).

Received on Account or Delivery Information Screen - ROA

Immediately before and after the actual product is delivered, the "Received on Account" (ROA) or "Delivery Information Screen" will be shown. This screen allows the operator to modify product, pricing, and other data for the delivery.

There are several Settings (listed below) which may modify the behavior of this screen and require that certain variables be entered prior to printing the delivery ticket.

If none of the ROA screen variables are required and the operator presses Remote Print (on the Register), the RoadWarrior will automatically skip the ROA screen. However, if none of the ROA screen variables are required and the operator presses Print on the RoadWarrior the ROA screen will be shown.

If the ROA Screen should never be shown, the setting '**DeliverySkipROAScreen**' should be set to YES. This setting overrides all of the ROA Screen variables requirements and always skips the ROA Screen.

Additionally, the '**DeliverySkipROAScreen**' setting overrides the settings to require one or more of the following values on the ROA screen:

- 'DeliveryAlertCode'
- 'DeliveryOdometer'
- 'DeliveryPercent'
- 'DeliveryMeterTicketNumber'
- 'DeliveryTankFilled'

SECTION 7 – QUANTITY ON BOARD

View the Quantity on Board (QOB) for All Products

- via the Register Utilities:
 - "U Utilities" (from the Main Menu)
 - "F1 Register Utilities"
 - "F2 View Calibrated Products" (which will show the current QOB for each calibrated product).
- via the Load Product Screen:
 - "F2 Load Product" (from the Main Menu)
 - "F1 Product Code" (which will show the current QOB for each calibrated product).

Add to existing QOB for a Single Product via Load product

When loading product the volume loaded will be added automatically to the QOB for a specified product.

- From the Main Menu:
 - "F2 Load Product" (from the Main Menu)
 - "F1 Product Code" (which will show the current QOB for each calibrated product).
 - Enter the volume to be loaded. If there are two registers you will be prompted to select a register. If there is more than 1 calibrated product you will be prompted to select a product and the QOB will have the loaded volume added to the current QOB.

Edit the QOB for a single Calibrated Product

- From the Main Menu:
 - "U Utilities" (from the Main Menu)
 - "F1 Register Utilities"
 - "F2 View Calibrated Products" (which will show the current QOB for each calibrated product and allow you to select a product to edit the QOB).
 - Use the arrow keys to select the QOB to modify, then press Enter (or press ESC Back to Cancel).
 - Enter the new/current QOB volume, press Enter to Save.

APPENDIX A – ROADWARRIOR FILE PROCESS

RoadWarrior File Process

1. Export Accounts from BackOffice Software
 - a. Refer to BackOffice Software for specific instructions
 - b. Create an SD Account file and load it onto a Flash Drive.
 - c. The SD Data file must be the only file on the Flash Drive
 - d. Repeat Step 1 for each RoadWarrior.
2. Insert Flash Drive with SD file into the RoadWarrior
3. Driver performs Deliveries and Loads Product
4. Transactions in the SD Data are brought into office
5. Import Transaction File from each RoadWarrior into BackOffice Software
 - a. Repeat Step 5 for each RoadWarrior with Transaction data.
 - b. MID:COM recommends the driver print a "Shift Report" for each active register at the end of every day and submit those shift reports with the days tickets and payments for data auditing purposes.

APPENDIX B - INSTALLATION

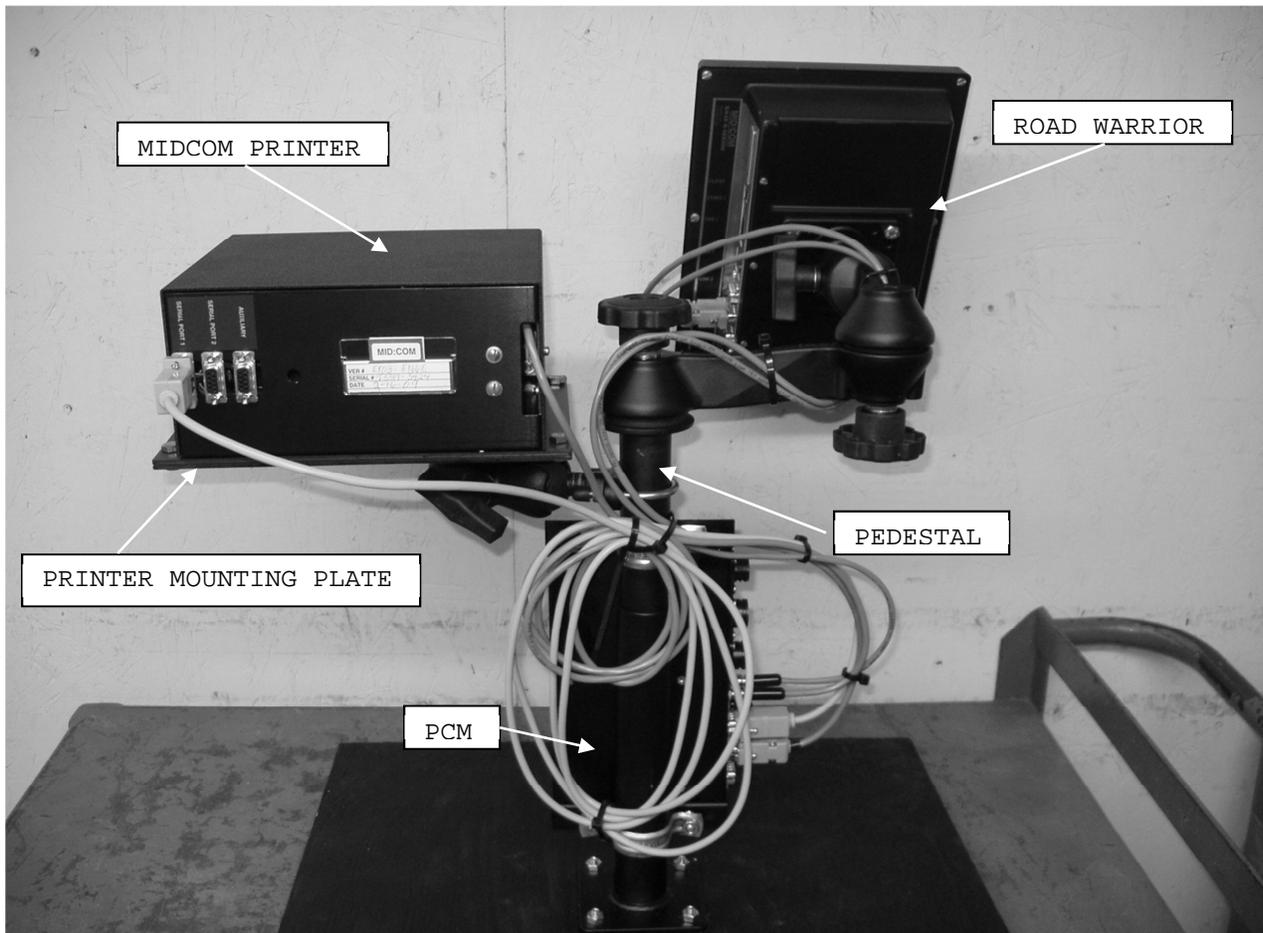


Figure 2. RoadWarrior Installed on a RAM Mount® Pedestal

All cables should be routed neatly to their destinations and cabled tied to pedestal.

The PCM mounts to the pedestal post using U shaped brackets and 1/4-20 X 1 inch bolts, washers, and nuts.

The power to the MidCom Printer and the RoadWarrior is +12 volts located on the PCM.

The cable marked with letter "N" goes from "Serial 1" connector of Printer to PCM port labeled "PRINTER".

The serial cable is connected to PCM "Serial 1 Host" and "COM 2" on the RoadWarrior.

Mount the printer mounting plate to pedestal plate using flat head screws. Then mount the printer on the mounting plate.

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