Introduction

Purpose

This document describes the setup parameters for the Boundless® VT 520 terminal and printer switch settings for the Okidata® 184/186 printer, when connected to one of the following Gasboy® Fuel Management Systems:

- Series 1000
- Series 900 TopKAT™
- CFN® Series
- "A" Systems

This document is not intended to be a complete reference for the Boundless terminal. The latest Parameter screens are shown in this document. However, interim software changes by Boundless may result in minor variations. For any clarifications, refer to documentation section of the Boundless website (http://www.boundless.com).

Table of Contents

Related Documents

Gasboy Documentation

Document Number	Title	GOLD Library
C01665	CFN Series SCII & Islander™ II Start-Up Manual	Gasboy Fuel Management Products
C01918	CFN Series SCII Installation Manual	Gasboy Fuel Management Products
C08921	Series 1000 FMS Startup Manual	Gasboy Fuel Management Products
C35587	Gasboy CFN Islander I & II Installation Quotation Guide	Gasboy Fuel Management Products
C35963	CFN Islander II Installation Manual	Gasboy Fuel Management Products
MDE-4319	TopKAT Fuel Management System Installation Manual	Gasboy Fuel Management Products
MDE-4344	Series 1000 Fuel Management System Installation Manual	Gasboy Fuel Management Products

Other Documentation

Document Number	Title	Where to find
598-0013029	VGB10/VGB11 Video Terminal Installation and Operating Information	http://www.boundless.com/Documentation/598-0013029.pdf

Important Safety Information

Notes: 1) Save this Important Safety Information section in a readily accessible location.

2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.

Preliminary Precautions
You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain or service this equipment.

Emergency Total Electrical Shut-Off
The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

> **⚠ WARNING**
>
> The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.
> You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

Total Electrical Shut-Off Before Access
Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gasboy equipment.

Evacuating, Barricading and Shutting Off
Any procedure that requires access to the pump/dispenser or STPs requires the following actions:

- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

Read the Manual
Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gasboy Authorized Service Contractor or call the Gasboy Service Center at 1-800-444-5529. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations
Applicable information is available in National Fire Protection Association (NFPA) 30A; *Code for Motor Fuel Dispensing Facilities and Repair Garages*, NFPA 70; *National Electrical Code (NEC)*, Occupational Safety and Hazard Association (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain or service this equipment in accordance with these codes, regulations and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

Replacement Parts
Use only genuine Gasboy replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gasboy replacement parts could create a safety hazard and violate local regulations.

Safety Symbols and Warning Words
This section provides important information about warning symbols and boxes.

Alert Symbol

⚠ This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

Signal Words
These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury or damage to the equipment:

⚠ **DANGER**: Alerts you to a hazard or unsafe practice which will result in death or serious injury.

⚠ **WARNING**: Alerts you to a hazard or unsafe practice that could result in death or serious injury.

⚠ **CAUTION** with Alert symbol: Designates a hazard or unsafe practice which may result in minor injury.

CAUTION without Alert symbol: Designates a hazard or unsafe practice which may result in property or equipment damage.

Working With Fuels and Electrical Energy

Prevent Explosions and Fires
Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF lines.

No Open Fire

Open flames from matches, lighters, welding torches or other sources can ignite fuels and their vapors.

No Sparks - No Smoking

Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

⚠ **WARNING**

The pump/dispenser contains a chemical known to the State of California to cause cancer.

⚠ **WARNING**

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

⚠ **WARNING**

Gasoline/DEF ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

⚠ **WARNING**

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors.
If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

⚠ **WARNING**

Gasoline inhaled may cause unconsciousness and burns to lips, mouth and lungs. Keep airway open. Seek medical advice immediately.

⚠ **WARNING**

Gasoline/DEF spilled in eyes may cause burns to eye tissue. Irrigate eyes with water for approximately 15 minutes. Seek medical advice immediately.

⚠ **WARNING**

Gasoline spilled on skin may cause burns. Wash area thoroughly with clear water. Seek medical advice immediately.

⚠ **WARNING**

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the work location. Seek medical advice recommended treatment if DEF spills into eyes.

IMPORTANT: Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

VT 520 Terminal Setup

Install and complete the setup of the terminal as specified in the manufacturer's setup instructions and enter the SET-UP mode to change parameters on several screens. This enables the terminal to function with both the Okidata printer and Gasboy Fuel Management System.

When setting up the terminal, use the following keys as required.

Key(s)	Usage
CAPS LOCK and **PRINT SCREEN**	Press these keys simultaneously to enter or exit the SET-UP mode.
↑ ↓ ← → (Up/Down/Left/Right arrows)	Press these keys to move among menus or within lists or to highlight a parameter.
ENTER	Press this key to start action or choose the currently highlighted parameter value.

IMPORTANT INFORMATION

Setup parameter values described in the following steps are critical and must be configured as shown. All other parameters must be left at their default values.

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1 Press **CAPS LOCK** to activate the caps lock feature. Lock appears in the lower right-hand corner of the screen.

**2** Press **CAPS LOCK** and **PRINT SCREEN** simultaneously to enter SET-UP mode (see Figure 1).

Figure 1: SET-UP Mode
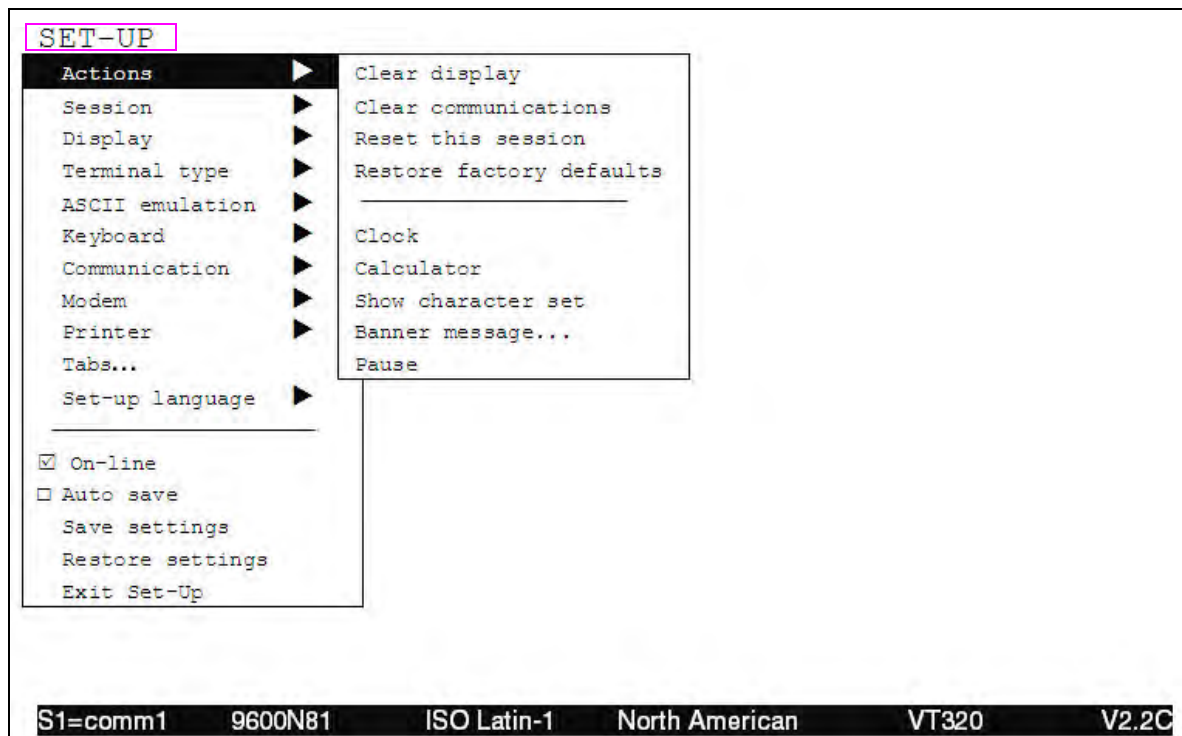
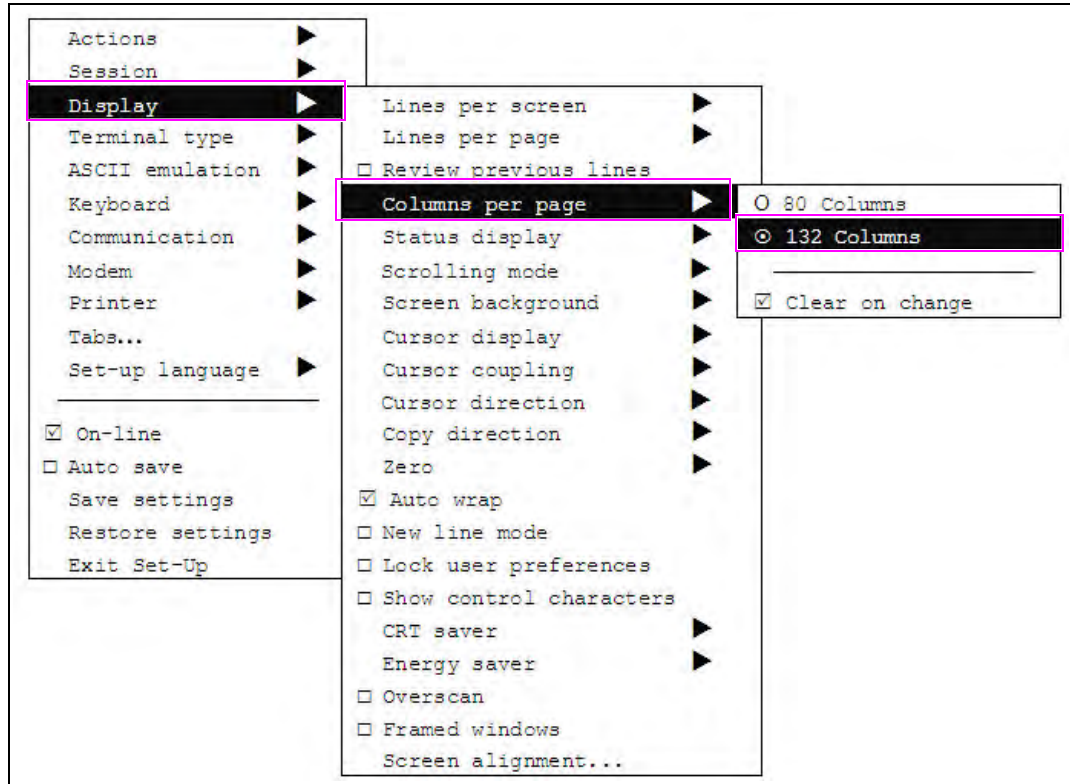*Note: The status line at the bottom of the screen shows the current terminal settings.*

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3 Use the arrow keys to highlight the **Actions ▶ Restore factory defaults** option and press **ENTER** to restore the factory default values (see Figure 2).

Figure 2: Restore Factory Defaults Option
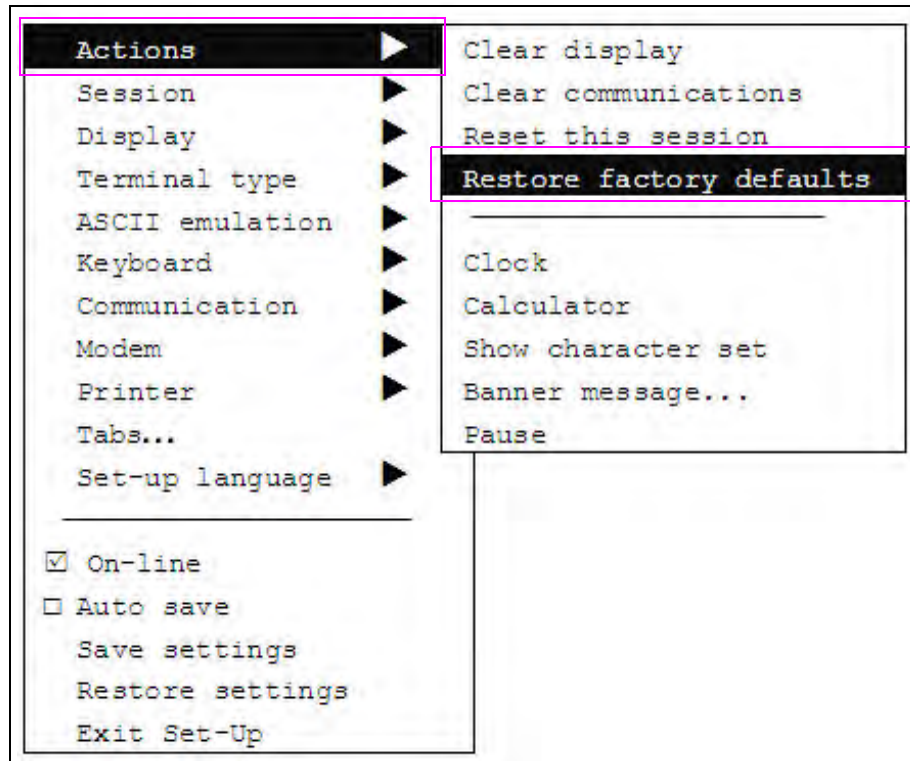
4 Use the arrow keys to highlight the **Display ▶ Columns per page ▶ 132 Columns** option and press **ENTER** to select the 132 column settings (see Figure 3).

**Figure 3: 132 Columns Option**

```
Actions              ▶
Session              ▶
Display              ▶      Lines per screen        ▶
Terminal type        ▶      Lines per page          ▶
ASCII emulation      ▶    □ Review previous lines
Keyboard             ▶      Columns per page        ▶      O 80 Columns
Communication        ▶      Status display          ▶    ⊙ 132 Columns
Modem                ▶      Scrolling mode          ▶    _____
Printer              ▶      Screen background       ▶    ☑ Clear on change
Tabs...                     Cursor display          ▶
Set-up language      ▶      Cursor coupling         ▶
_____         Cursor direction        ▶
☑ On-line                   Copy direction          ▶
□ Auto save                 Zero                    ▶
  Save settings           ☑ Auto wrap
  Restore settings        □ New line mode
  Exit Set-Up             □ Lock user preferences
                          □ Show control characters
                            CRT saver               ▶
                            Energy saver            ▶
                          □ Overscan
                          □ Framed windows
                            Screen alignment...
```

*Note: The **Columns per page** setting of 132 may be changed to 80, if required. However, this may cause transactions displayed on the screen (and on the Okidata printer) to wrap, hindering readability.*
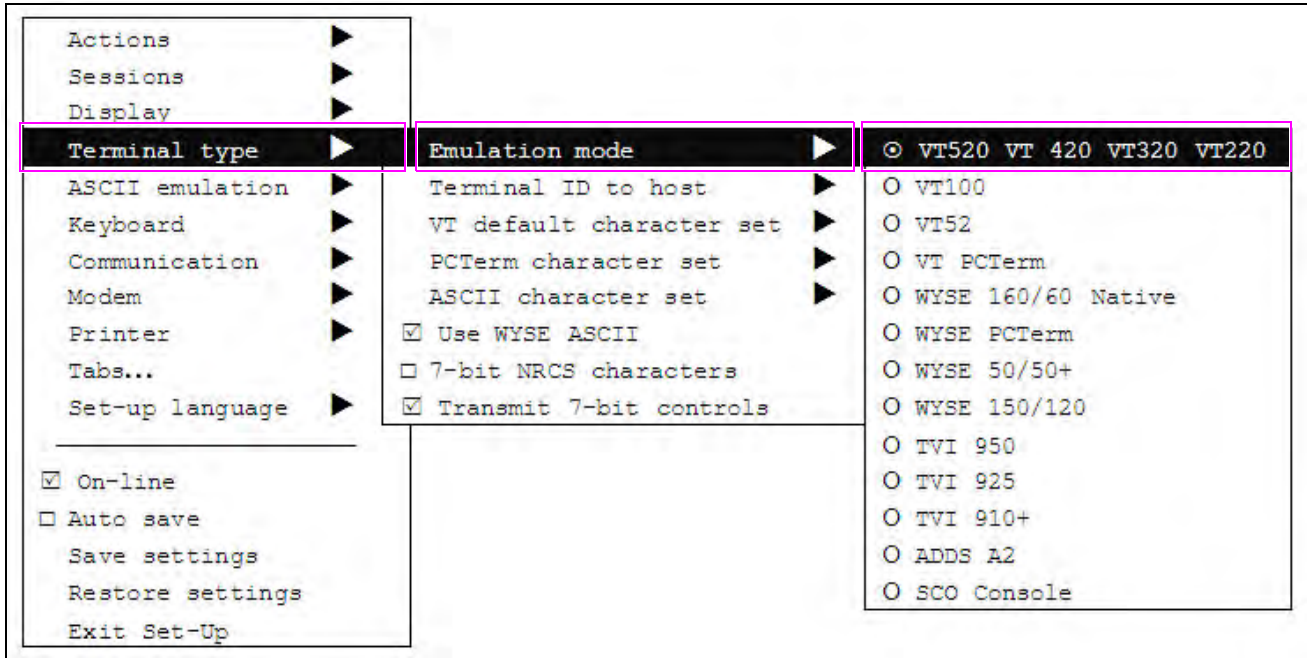
5 Use the arrow keys to highlight the **Display ▶ Auto wrap** option and press **ENTER** to activate the auto wrap option (see Figure 4).

Figure 4: Auto Wrap Option
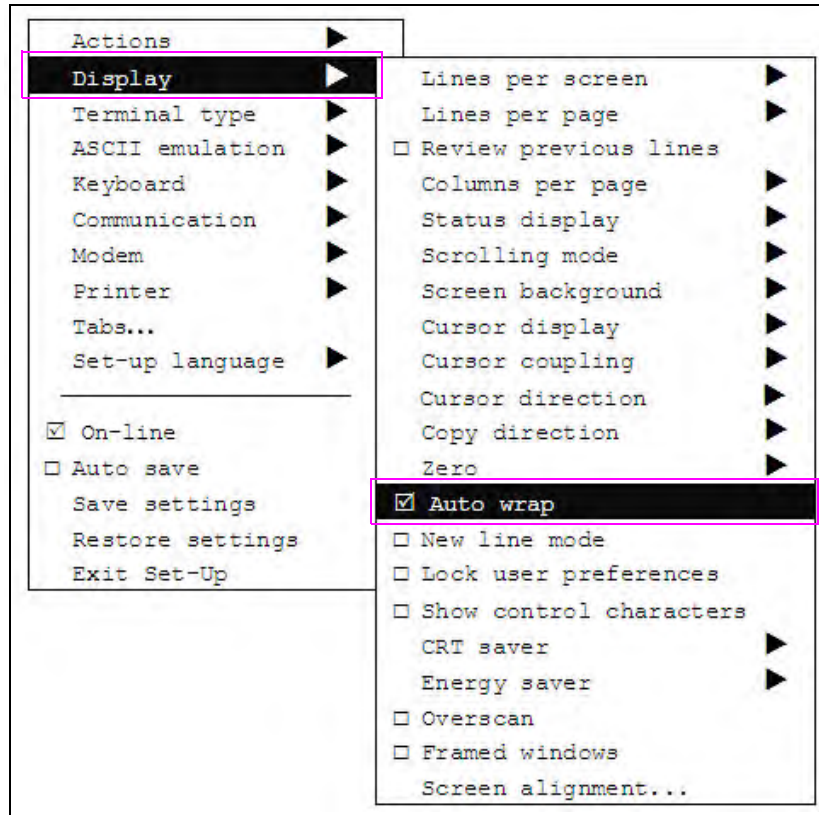
6 Use the arrow keys to highlight the **Terminal type ▶ Emulation mode** option, select the correct Emulation mode parameter, and press **Enter** to change the Emulation mode (see Figure 5). The Emulation mode parameter must be set to:
- **VT320 VT220** for Series 1000, FleetKey, TopKAT and "A" systems
- **VT52** for CFN Series systems

Figure 5: Emulation Mode Option

7 Use the arrow keys to highlight the **Communication ▶ Port select** option and press **ENTER** (see Figure 6).

Figure 6: Port Select Option

8 Use the arrow keys to highlight the **Print ▶ comm3** option for session 1 and press **ENTER** (see Figure 6 on page 9). Repeat the selection for all sessions. Use the arrow keys to highlight **OK** and press **ENTER**.

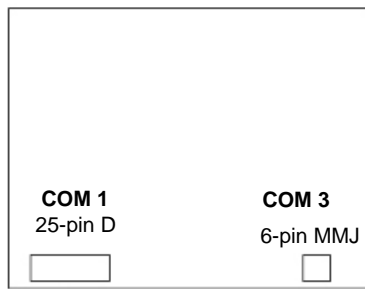For connections on the rear side of the terminal, see Figure 7.

Figure 7: Terminal Connections - Rear Side
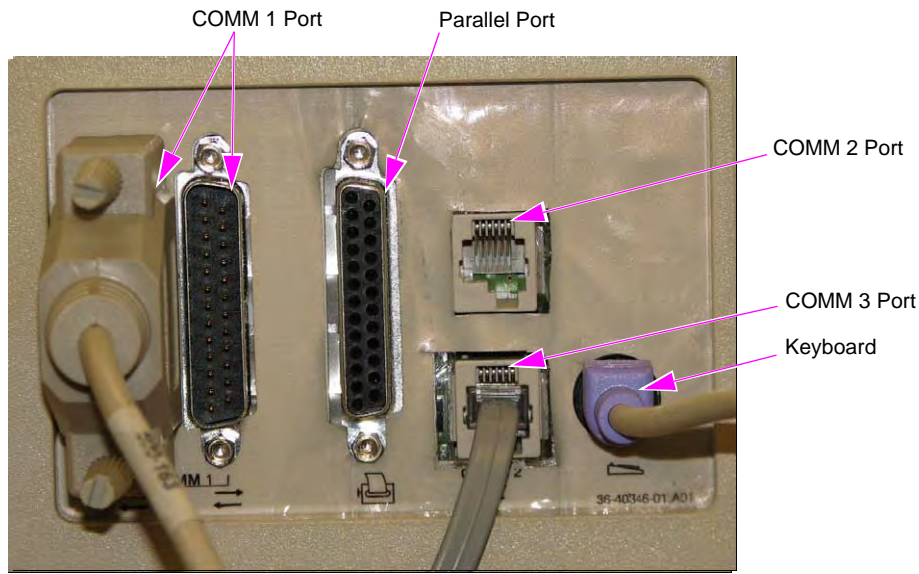
9 Use the arrow keys to highlight the **Printer ▶ Print mode** option (see Figure 8).

Figure 8: Print Mode Option
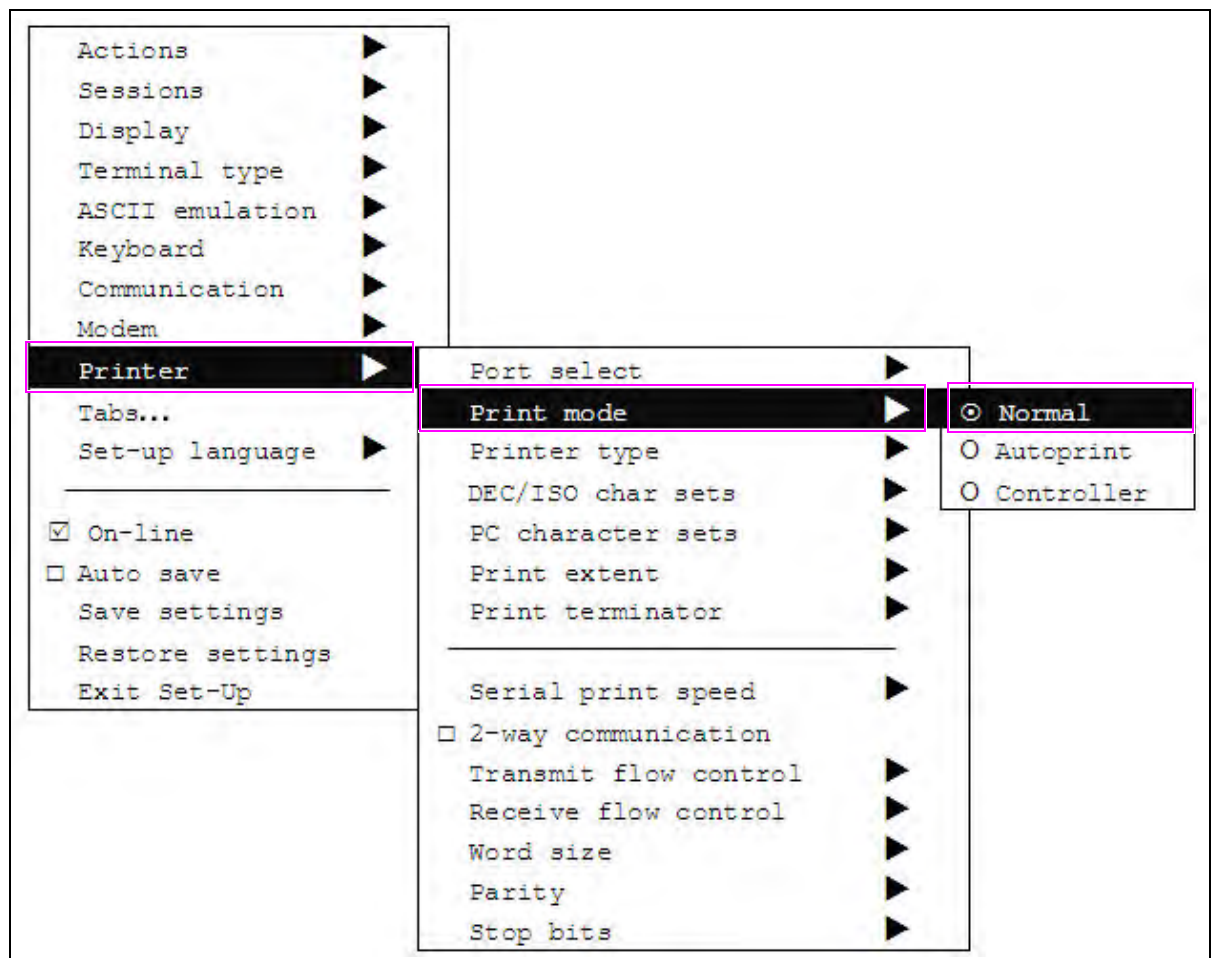
10 Set the **Print mode** parameter as follows:

Note: Ensure that you use the correct parameter setting for your software version.

- If you have a Site Controller I, Islander I, Site Controller II*, or Islander II* software version 1.0F or earlier, Series 1000, TopKAT or "A" System, then set the **Print mode** parameter to **Autoprint**.
  Note: In Autoprint, the Okidata printer acts as a logger and also prints everything performed in command mode. To temporarily suspend the output to the printer, press ***CTRL*** *and* ***PRINT SCREEN*** *simultaneously (the message line at the bottom of the CRT screen toggles between* ***Printer: Ready*** *and* ***Printer: Auto Print****, when these keys are pressed). Press* ***CTRL*** *and* ***PRINT SCREEN*** *simultaneously to resume output to the printer.*

• If you have a Site Controller II* or Islander II* software version 1.0F or later, then you may set the **Print mode** parameter to **Normal** and configure the DIRECT PRINTOUT CHANNEL in SYS_PAR to AUX-0.

*Note: This parameter combination sends the direct printout to the Okidata logger and it is not seen on the CRT screen. Any commands performed at the CRT are not logged unless either output is directed to the logger (using ;>log with the command) or if you press **CTRL** and **PRINT SCREEN** simultaneously to toggle the Main port output to the logger (the message line at the bottom of the CRT screen toggles between **Printer: Ready** and **Printer: Auto Print**, when these keys are pressed).*

*If the Okidata printer is connected directly to the Site Controller II or Islander II, then configure the DIRECT PRINTOUT CHANNEL in SYS_PAR to the port to which the printer is connected and for proper connection (RS-232), refer to Site Controller II or Islander II Installation Manual.

11 Use the arrow keys to highlight the **Printer ▶ Serial print speed** option. Select **9600 baud** and press **ENTER** (see Figure 9).

Figure 9: Serial Print Speed Option

12 If you have a Series 1000 software earlier to version 8.1, FleetKey software earlier to version 2.1, or "A" System software, use the arrow keys to highlight the **Communication** and **Printer** options listed below and set the following parameter values:
  - **Communication ▶ Transmit speed** parameter = **1200**
  - **Communication ▶ Transmit flow control** parameter = **NONE**
  - **Communication ▶ Receive flow control** parameter = **NONE**
  - **Printer ▶ Serial print speed** parameter = **9600**
  - **Printer ▶ Transmit flow control** parameter = **NONE**
  - **Printer ▶ Receive flow control** parameter = **NONE**

  For "A" Systems, set the following parameter values:
  - **Communication ▶ Word size** parameter = **7**
  - **Communication ▶ Parity** parameter = **Even**
  - **Communication ▶ Stop Bits** parameter = **2**

13 Use the arrow keys to highlight the **Save settings** option and press **ENTER** to save the terminal settings (see Figure 10).

Figure 10: Save Settings Option
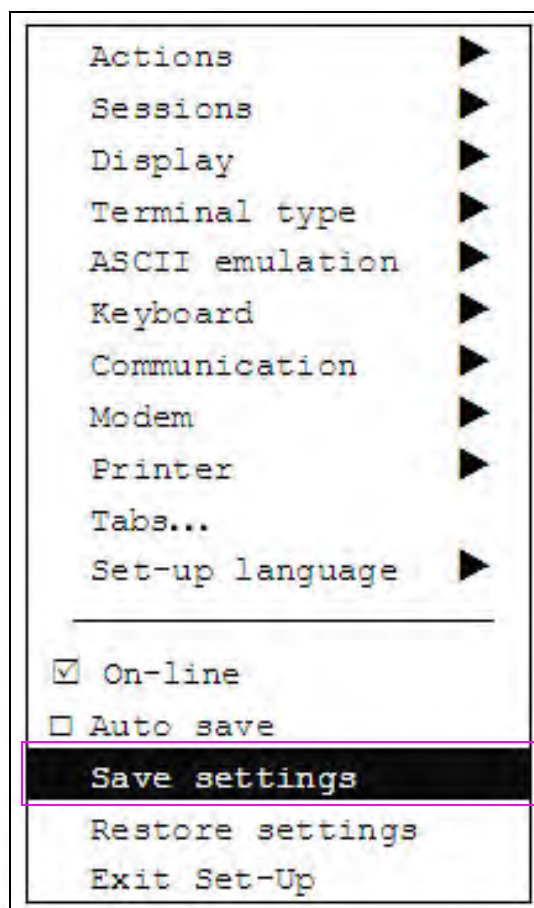
14 Press **CAPS LOCK** and **PRINT SCREEN** simultaneously or highlight the **Exit Set-Up** option and then press **ENTER** to exit SET-UP mode.

Okidata 184/186 Printer Setup

To prepare the Okidata 184/186 printer for operation with the Boundless VT 520 terminal and your Gasboy Fuel Management System, proceed as follows:

1   Install and complete the setup of the printer as specified in the manufacturer's setup instructions.

2   Set up the switches as follows.

Switches SW1-1 through SW1-8		
SW1	**SET**	**Function**
SW1-1	**ON**	Parity: Odd
SW1-2	**ON**	Parity: Without
SW1-3	**ON**	Data bits: 8
SW1-4	**OFF**	Protocol: XON/XOFF (Series 1000 V8.1 or later, FleetKey V2.1 or later, CFN, or TopKAT)
	ON	Protocol: Ready/Busy (Series 1000 versions earlier to V8.1, FleetKey versions earlier to V2.1, and "A" systems)
SW1-5	**ON**	Test select: Circuit
SW1-6	**ON**	Mode select: Print
SW1-7	**ON**	Busy line selection: DTR - Pin 20
SW1-8	**ON**	Busy line selection: DTR - Pin 20

Switches SW2-1 through SW2-3			
Baud Rate*	**SW2-1**	**SW2-2**	**SW2-3**
9600	**OFF**	**ON**	**ON**
2400	**OFF**	**OFF**	**ON**
1200	**ON**	**ON**	**OFF**
300	**ON**	**OFF**	**OFF**

*Any change made to the Baud Rate must also be matched on the Boundless terminal setup, **Printer ▶ Serial print speed** parameter.*

Switches SW2-4 through SW2-8		
SW2	**SET**	**Function**
SW2-4	**ON**	DSR output signal: Active
SW2-5	**ON**	Buffer threshold: 32 bytes
SW2-6	**OFF**	Busy signal timing: 1 sec (minimum)
SW2-7	**ON**	DTR signal: Space after power on
SW2-8	**OFF**	Not used

Printer Page Setup

To set up the printer page, proceed as follows:

1 Press **SELECT** to place the printer in offline mode. The SELECT light stops glowing.

2 Position the print head to the top of the paper and press **TOF SET**.

3 Press **SELECT** to place the printer in online mode. The SELECT light glows.

4 Press **MODE** until the light next to **HSD** glows.

5 Press **PITCH** until the light next to **17** glows.

Note: If transactions are less than 80 characters, then Pitch may be set to a lower number (resulting in larger print).

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